Knowledge Resources, Corporate Governance, and Ethical Banking

Effects of Intellectual Capital and Corporate Governance on Performance of Islamic Financial Institutions

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ABSTRACT

In recent years, the knowledge management literature has exhibited relatively few new empirical contributions, in contrast to the flurry of such work in the ethical financial sector. The purpose of this research study was three fold. The primary objective was to examine, to what extent, Intellectual Capital (hereafter referred to as IC) and Corporate Governance (hereafter referred to as CG) features affected the performance (both accounting-and market-based) of 64 Islamic Financial Institutions (hereafter referred to as IFIs) operating in ten different geographical locations for the period 2007-2011, while controlling for firm-specific characteristics. The second objective was to analyse the effects of IC and CG features on the performance of the sampled IFIs before and after the financial crisis. Finally, the research aimed to explore the effects of IC, CG and firm-specific characteristics on the performance of fully-fledged Islamic banks (hereafter referred to as FFIBs) and Islamic Shariah-windows (hereafter referred to as Windows).

The study used the quantitative research method in which secondary data, comprising of the annual/financial statements of the selected IFIs, was used to extract data. The population of this study was IFIs both FFIBs and Windows operating worldwide. This study's sample of IFIs was selected based on the Bankscope database while data, related to the governance-specific variables such as board-size, non-executive directors, role duality, Shariah supervisory board, and size of the audit committee, was collected by hand using the annual reports of each IFI. Value Added Intellectual Coefficient (hereafter referred to as VAIC) was used as a methodological tool to analyse the data.

The following are the key findings of the research. Firstly, IC was associated positively with the sampled IFIs' accounting and market-based performance. Secondly, IC was associated with positively with the sampled IFIs' accounting and market-based performance at all times i.e. in the pre- and post-crisis periods. Hence, IC was the main defence line for the sampled IFIs. Thirdly, the classical model of CG did not seem to explain the sampled IFIs' performance. Finally, this study reports that the Islamic finance industry is not homogeneous since not all the financial institutions offering Shariah compliant products are FFIBs. They can be divided further into FFIBs and Windows, in which FFIBs have relatively stronger market valuation as compared to Windows.

This study makes a contribution to the existing literature on IC, precisely to IC performance literature, by providing the evidence about the role of IC in determining the performance of the ethical banking model. Equally, this study contributes to the literature on Islamic banking and finance as well as the performance of IFIs by measuring the effects of intangible resources on performance. Likewise, the study contributes to the literature on IC and corporate governance by combining both concepts in one study. Another contribution of this study is that it considered IC and CG performance in the pre- and post-financial crisis periods; this provides a novel insight into the role knowledge resources i.e. IC in times of financial meltdown. Finally, it points out that the Islamic finance industry is not homogeneous as such since not all IFIs are FFIBs. Instead, there exists a distinction within the industry.

Besides the contribution to the literature, this research is of interest to policy makers and, on a practical level, Islamic banking and finance regulators may use the insights, provided by this study, as a basis for further discussion in determining the role of IC and CG-features in a Shariah-complaint banking model. Rating agencies may use this

information when evaluating the real value of an IFI. Likewise, IFIs can use this information to identify and have a better understanding of their competitive advantage in the market. Finally, investors may consider this information while making their investment decisions.

The study was not free from constraints and limitations. The main limitation lay in its methodological tool (Value Added Intellectual Coefficient, VAIC) for measuring IC. The VAIC model was challenged by many studies (see Chang, 2007; Ståhle et al., 2011). Nonetheless, there exists no single method of measuring IC. The VAIC method uses quantitative data and, therefore, the use of VAIC is justified because this study used secondary data and, hence, was quantitative in nature. Arguably, this was reliable and validated since it was drawn from the audited data disclosed in the annual reports/financial statements of the selected IFIs.

The study offers a novel insight into the ethical banking business model and draws attention to the increasingly important role that knowledge resources i.e. IC play in it. The study calls for a radical departure from the existing orthodox CG model, particularly for cohesive organisations such as Islamic banks, which are based on trust.

DEDICATIONS

To my late father (May Allah bless him),

"For his love and measureless support from the Heaven"

To my dear loving mother **Shahda Begum**,

Thanks for your support, encouragement, and measureless love that have sustained me throughout my life. It was never possible for me to attain such intellectual nobility without the upbringing, insightfulness and vision that you have provided me throughout my life.

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- BAFA-Scottish Area Group Annual Conference, University of St. Andrews, United Kingdom 2014
- Scottish Doctoral Colloquium (ScotDoc) in Accounting and Finance, United Kingdom 2014
- Islamic Business Management Conference, Putra World Trade Centre, Kualalumpur, Malaysia 2014
- Foundation of Islamic Finance (FIFC) Conference, Durham University, United Kingdom 2014
- BAFA annual conference London, United Kingdom 2014
- International Conference for Academic Disciplines, American University in Rome, Italy 2012
- The Fifth ISBEE World Congress, Warsaw, Poland 2012

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LIST OF ABBREVIATIONS

IC	Intellectual Capital
ICR	Intellectual Capital Research
CG	Corporate Governance
IFI	Islamic Financial Institution
IB	Islamic Bank
CFI	Conventional Financial Institution
ROA	Return on Assets
ROE	Return on Equity
VAIC	Value Added Intellectual Coefficient
HC	Human Capital
HCE	Human Capital Efficiency
SC	Structural Capital Efficiency
SCE	Structural Capital Efficiency
CE	Capital Employed
CEE	Capital Employed Efficiency
BSIZE	Board Size
NED	Non-Executive Director
Duality	Role Duality
SSB	Shariah Supervisory Board
ACS	Audit Committee Size

FSIZE Firm Size

BIG4 Big Four Auditors

Listing Listing Status

Region Operating Region

IFSB Islamic Financial Services Board

AAOIFI Accounting and Auditing Organization for Islamic Financial Institutions

IDB Islamic Development Bank

NSA National Shariah Authority

OSA Organizational Shariah Authority

CIMA Chartered Institute of Management Accountants

OECD Organization for Economic Co-operation and Development

HSBC Hong Kong and Shanghai Banking Corporation

FSA Financial Services Authority

VIF Variance Inflation Factor

IIRC International Integrated Reporting Council

IT/IS Information Technology/Information System

SME Small and Medium Enterprises

EU European Union

UAE United Arab Emirates

UK United Kingdom

USA United States of America

GLOSSARY OF ARABIC WORDS

Allah	The Name of the Creator of the Universe and all that it contains according to Islam. Derives from the word "*Ilah*" which means "the One deserving all worship", the One to Whom all hearts submit in love, fear, reverence, desire, trust and sincerity, and to Whom all limbs submit in all forms of worship such as prayers, supplications, sacrifices, invocations, etc.
Al-wadia / Al-wadi'ah	This refers to deposits in trust, in which a person may hold property in trust for another, sometimes by implication of a contract.
Amana/ Amanah	Literal meanings are reliability, trustworthiness, loyalty, honesty. Technically, an important value of Islamic society in mutual dealings; anything, which is in possession of a person who is not the owner of it for safekeeping. In case of unintended loss to the thing, he is not obliged to pay compensation.
Ameen / Amin	Custodian or guardian or trustee.
Bai / Bay'	Sale. Commonly used as a prefix in referring to different types of sales. A comprehensive term that applies to sale as well as many other transactions that are not strictly referred to as sales in positive law; bilateral contract; exchange.
Fard	Obligatory. An act which is obligatory on Muslims.
Fatwa/ Fatwah (Plural: Fatawa)	A religious decree, a legal verdict given on a religious basis. The sources on which a fatwa is based are the Holy Quran, and all other authenticated Ahadeeth.
Fiqh	Muslim jurisprudence; it covers all aspects of life, religious, political, social or economic. In addition to religious observances (prayer, fasting, zakat and pilgrimage) it covers family law, inheritance, social obligations, commerce, criminal law, constitutional law and international relations, including war. The whole corpus of fiqh is based primarily on the Quran and the Sunnah and secondarily on ijma and ijtihad.
Gharar	Uncertainty, hazard, chance or risk, ambiguity and uncertainty in transactions. Technically, the sale of something which is not present at hand or the sale of something where the consequences or outcome is not known. It can also be a sale involving risk or hazard in which one does not know whether it will come to be or not, such as fish in water or a bird in the air or an event where assurance or non-assurance is subject to chance and thus not known to parties of a transaction. Can also mean uncertainty or a hazard that is likely to lead to a dispute in a contract.
Hadith (Plural: Ahddith)	A report on the saying, deed or tacit approval of the Prophet, peace be on him.
Hajj	Hajj means pilgrimage to Mecca (a city located in Saudi Arabia) and other holy places. Hajj, the fifth pillar of Islam, is a duty on every Muslim who is financially and physically able to carry it out, at least once in his lifetime. There is a specific period for Hajj, namely one week from the 8th day of the Islamic month of Dhul

	Hijjah to the 13th day of that month in the Islamic lunar calendar.
Halal / Halaal	Things/acts lawful in Islamic law –permissible. The concept of halal has spiritual overtones. In Islam there are activities, professions, contracts and transactions which are explicitly prohibited (haram) by the Quran or the Sunnah. Barring them, all other activities, professions, contracts, and transactions etc. are halal. This is one of the distinctive features of Islamic economics vis-a-vis Western economics where no such concept exists. In Western economics, all activities are judged on the touchstone of economic utility. In Islamic economics, other factors, mostly spiritual and moral are also involved. An activity may be economically sound but may not be allowed in the Islamic society if it is not permitted by the Shariah.
Haq	Legal right.
Haram	An act or product which is unlawful or prohibited in Islam.
Hawala	Endorsement, assignment, or avail. Literally means a bill of exchange, promissory note, cheque or draft. Technically, a debtor passes on the responsibility of payment of his debt to a third party who owes the former a debt. Thus the responsibility of payment is ultimately shifted to a third party. Hawala is a mechanism for settling international accounts, by book transfers. This obviates, to a large extent, the necessity of physical transfer of cash.
Hibah	Gift.
Ijara/ijarah	Literally means, letting on lease. Technically, sale of a definite usufruct in exchange for a definite reward. Commonly used for wages, it also refers to a contract of land lease at a fixed rent payable in cash. It is an arrangement under which an Islamic bank leases equipment, a building or other facility to a client against an agreed rental. The rent is so fixed that the bank gets back its original investment plus a profit on it.
Ijma'	Consensus of opinion of Muslim jurists on a specific matter, consensus of the jurists on any issues of fiqh after the death of the Prophet.
Ijtehad / Ijtihad	Literally means, an effort, exertion, industry, or diligence. Technically, endeavour of a jurist to derive or formulate a rule of law on the basis of evidence found in the sources. A scholarly effort through which a jurist/scholar derives Islamic law on the basis of Quran and Sunnah.
Istisna'a/ Istisna	This is a kind of sale where a commodity is transacted before it comes into existence. It means, to order a manufacturer to manufacture a specific commodity for the purchaser. If the manufacturer under takes to manufacture the goods for him with material from the manufacturer, the transaction of Istisna'a comes into existence. But it is necessary for the validity of istisna' that the price is fixed with the consent of the parties and that necessary specification of the commodity (intended to be manufactured) is fully settled between them.
Joalah/ Joaalah	The undertaking of one party (the *Jael*, bank or employer) to pay a specified amount of money to another party in return for rendering

	a specified service in accordance with the terms of contract.
Maiser	Gambling. Literally means getting something too easily.
Mal	Wealth.
Modharabah	A contract between financier and working partner. A profit and loss sharing contract in which one party provides capital and the other party manages the enterprise. In ease of loss the provider of capital bears the financial loss while the worker loses his labor. In case of profit both parties share it in agreed proportions. An agreement between two or more persons whereby one or more of them provide finance, while the others provide entrepreneurship and management to carry on any business venture whether trade, industry or service, with the objective of earning profits. They share the profit in an agreed proportion. The loss is borne only by the financier's in proportion to their share in total capital.
Mudharaba/ Mudarabah	The term refers to a form of business contract in which one party brings capital and the other personal effort. The proportionate share in profit is determined by mutual agreement. But the loss, if any, is borne only by the owner of the capital, in which case the entrepreneur gets nothing for his labour. The financier is known as "*rab-al-maal*" and the entrepreneur as "*mudarib*". As a financing technique adopted by Islamic banks, it is a contract in which all the capital is provided by the Islamic bank while the business is managed by the other party. The profit is shared in pre-agreed ratios, and loss, if any, unless caused by negligence or violation of terms of the contract by the "*mudarib*" is borne by the Islamic bank. The bank passes on this loss to the depositors.
Murabaha	Literally means, a sale on profit or cost plus profit or sale at stated cost price and mark-up or sale at a specified profit margin. The term is, however, now used to refer to a sale agreement whereby the seller purchases the goods desired by the buyer and sells them at an agreed marked-up price, the payment being settled within an agreed time frame, either in instalments or lump sum. The seller undertakes all the management needed for the purchase and also bears the risk for the goods until they have been delivered to the buyer.
Musharkah	The term refers to a financing technique adopted by Islamic banks. It is an agreement under which the Islamic bank provides funds which are mingled with the funds of the business enterprise and others. All providers of capital are entitled to participate in the management but not necessarily required to do so. The profit is distributed among the partners in pre-determined ratios, while the loss is born by each partner in proportion to his contribution.
P.B.U.H.	These letters are abbreviations for the phrase Peace Be Upon Him which is the translation of the Arabic expression Alaihis Salam or A.S., which is an expression that is said when the name of a prophet is mentioned. This expression is widely used by English speaking Muslims.
Qardh Hasan	A loan extended without interest. A gracious loan without interest in which the benefit to be derived is gifted by the owner to the beneficiary without this charitable act, the use of the money for a

	period would be considered an unjustified excess transferred to the beneficiary also called *Ribaal-nasiah*.
***Qardh*/Qard**	A loan given for a good cause in the name of Allah, in hopes of repayment or reward in the Hereafter, debt.
Quran	The Holy book containing the actual words of Allah revealed to the Prophet Muhammad (peace be upon him). This Holy Book of the Muslims consisting of the revelations made by God to the Prophet Muhammad, during his Prophet hood of about 23 years. The Quran lays down the fundamentals of the Islamic faith, including beliefs and all aspects of the Muslim way of life. These are supplemented or further elaborated by the Sunnah. The Quran consists of 30 parts (ajza), 114 chapters (surahs), and 6,666 verses (ayahs).
Rabb al-maal	Investor or owner of capital. A person who invests in Mudarabah/ Musharkah.
Rahn	Pledge or mortgage
Riba	Riba literally means increase, addition, expansion or growth. It is, however, not every increase, or growth, which has been prohibited by Islam. In the Shariah, Riba technically refers to the premium that must be paid without any consideration. According to the jurists of Islam this definition covers the two types of Riba, namely: Riba Al Fadhl and Riba Al Naseah. ***Riba aI-Fadl:*** An extension of Riba to trade, because while trade is allowed, not everything is permitted in trade. The prohibition of Ribaal-fadl closes all back doors to Riba through trade. Unlawful excess in the exchange of two counter-values where the excess is measurable through weight or measure. According to some Ahadith (Sayings of the Holy Prophet) if six things i.e. gold, silver, wheat, barley, dates and salt are exchanged against themselves, they should be spot and be equal and been specified. If these conditions are not found, this transaction will become Riba Al Fadhl. ***Riba al' Nasiah:*** Literally means increase or addition of debt and it refers to the premium that must be paid by the borrower to the lender along with the principal amount as a condition for the loan or an extension in its maturity. It is thus equivalent to interest. the addition of the premium which is paid to the lender in return for his waiting as a condition for the loan and is technically the same as interest.
Shari'ah	Islamic Jurisprudence. Divine law consisting of Quran and Sunnah and on justification.
Shukuk/ Sukook	Check, certificate of debt, certificates of investment; plural of Shak.
Sunnah	Any saying of Prophet Muhammad (peace be upon him) or his act or any act of his companion endorsed by him. After the Quran, the Sunnah is the most important source of the Islamic faith and refers

	essentially to the Prophets example as indicated by his practice of the faith. The only way to know the Sunnah is through the collection of Ahddith.
Takaful	Islamic Insurance. A scheme of mutual support that provides insurance to individuals against hazards of falling into unexpected and dire need.
Ummah	Refers to the whole Muslim community, irrespective of color, race, language or nationality, which carries no weight in Islam.
Ushr	Ten per cent (in some cases five per cent) of agricultural produce payable by a Muslim as a part of his religious obligation, like Zakat, mainly for the benefit of the poor and the needy.
Venture	Inventory / Property risked contract.
Wadi'ah	Contract of deposit; bailment.
Wakalah	Agency.
Wakil	Agent.
Wali	Guardian.
Waqf	Endowment. A charitable trust in the name of Allah, usually in perpetuity, and usually for the purposes of establishing the Deen of Islam, teaching useful knowledge, feeding the poor or treating the sick.
Zakah / Zakat	Compulsories levy on every Muslim who has wealth greater than the amount of Nisab. The amount payable by a Muslim on his net worth as a part of his religious obligations, mainly for the benefit of the poor and the needy.
Zakah al-Fitr	A small obligatory head-tax imposed on every Muslim who has the means for himself and his dependents. It is paid annually.
Zakah Al-Mal	The Muslims wealth tax. One must pay 2.5% of one's yearly savings above a certain amount to the poor and needy Muslims. The Zakah is compulsory on all Muslims who have saved (at least) the equivalent of 85g of 24 carat gold at the time when the annual Zakah payment is due.
Zakatul Huboob	Zakah of grain/corn.
Zakatul Madan	Zakah of minerals.
Zakatur Rikaaz	Zakah of treasure/precious stones.
Zakatu-rid Tijaarah	Zakah of profits of merchandise.

Source: Adopted from Meezan Bank (Pakistan), http://www.meezanbank.com/glossary.aspx

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Chapter 2: Overview of the Research

2.1 Background

Sullivan (2000), referring to the traditional economic model, opined that land labour and capital were the basic resources for a company to operate. Nevertheless, the rapid development of knowledge-economy is shaking the foundation of several economic sectors, particularly the financial services industry. Such a drastic transformation threatens the survival of some existing incumbent Conventional Financial Institutions (hereafter referred to as CFIs). Contemporarily, it introduces new prospects and potential equity providers such as IFIs to the market. In order to compete effectively in today's knowledge-intensive era, financial institutions may need to embrace a new set of strategic priorities (Li, 2001). Correspondingly, organizations worldwide have recognized that intangible resources are essential to achieving and sustaining superior performance (Eisenhardt and Schoonhoven, 1996). IC has been acknowledged as the most significant source of value creation and competitive advantage of the modern organizations. Research on IC has been one of the most prolific research domains in the management literature in the last two decades. Studies, focusing on high-tech industries, such as IT (Hsu and Wang, 2012), have shown a significant association between IC and CG. Lately, studies have shown a sustained interest in the services sector and financial intuitions in particular (El-Bannany, 2008; Murthy and Mouritsen, 2011; Mention and Bontis, 2013; Kubo and Saka 2002) in comprehending how IC impacts on performance. However, studies, conducted within the financial sector, have shown mixed evidence about the relationship between IC and the overall performance of financial institutions.

IC is a strategic asset which helps an organization to maintain its profitability and to sustain competitive advantage in the market. IC is highly significant to IFIs since the whole phenomenon of Islamic banking is based on the intangible ideology of Shariah –the Islamic divine law. Therefore, knowing how IFIs' IC stock affects its performance i.e. profitability and market valuation, is of paramount importance. Knowing if higher IC efficiency has a substantial effect on the likelihood of an IFI's survival and how such an effect varies during a time of financial turmoil is an important detail for governing bodies in particular.

Subramaniam and Youndt (2005) stated that the innovative capability of a firm was tied closely to its stock of IC. Accordingly, firms are viewed as the distributed knowledge systems composed of individuals who embody knowledge (Un and Cuervo-Cazurra, 2004). Therefore, IFIs require subsequently higher degrees of intellectual capabilities and specifically the human intellectual capital for endorsement of product innovation. Equally, a somewhat sophisticated structural mechanism is essential to transform the intellectual ideas into tangible assets. Such an environment is provided by the structural capital; this enables an organization to create and leverage knowledge. Here, structural capital refers to both tangible aspects such as building, furniture, computers, and other facilities and intangible aspects i.e. copyrights, patents, software, databases etc. Strong structural capital has, also, a supportive culture which encourages employees to try and learn new knowledge. At the same time, financial capital is, also, essential to running the business like a well-oiled machine. Hence, in the Islamic finance industry, value creation is a combination of human, structural and financial capital and it is important to examine which of the three components contributes most to the IFIs' value creation.

Equally, the significance of effective CG mechanisms and corporate performance have been documented, also (John et al., 2008;Kirkpatrick, 2009; Angelides and Thomas, 2011; Erkens et al., 2012). Several key CG indicators corporate are said to be associated with the profitability and market value of banks. For instance, Peni and Vähämaa (2012) opined that, to a large extent, the recent financial meltdown of 2007–2008 was attributable to the banks' excessive risk-taking. Likewise, Brunnermeier (2008) suggested that firms' risk management and financing policies had a significant effect on the degree to which firms were affected by the economic crisis. Kashyap et al. (2008) argued that the firms' financing and risk management policies were the ultimate outcomes of 'cost-benefit trade-offs' made by governing bodies; they suggested that corporate performance was affected by the adopted governance mechanism (Erkens et al., 2012). On the one hand, extensive empirical literature (Sierra et al., 2006;Caprio et al., 2007; Laeven and Levine, 2009; Webb Cooper, 2009) suggested that effective CG mechanisms had positive effects on the performance of conventional banks. On the other hand, the empirical evidence from the Islamic finance industry (Grais and Pellegrini 2006, Matoussi and Grassa 2012) was limited and shallow.

Given the shallow evidence in the literature, the issue of the impacts of IC and CG-features on the performance of financial institutions, the extent of these impacts, and how they might vary across time horizons were the issues addressed in this study. Particularly, this research aimed to examine empirically the effects of IC and CG-features on IFIs' accounting performance (based on ROA) and market performance (based on Tobin's Q) of during the period 2007 to 2011, while controlling for firm-specific characteristics.

2.2 Problem Statement

Although the effects of IC on a firm's performance was researched over the last decade or so, empirical evidence on its actual contribution to the dynamics of the value creation process remained scarce in certain sectors such as Islamic banking and finance and, also, in term of geographical regions i.e. emerging (developing) economies. Particularly, studies, conducted within the financial sector, showed mixed evidence about the relationship between IC and the business performance of financial institutions. Therefore, it was imperative to study the link between IC and the business performance of the financial institutions. Likewise, empirical evidence on the relationship between CG features and firm performance was, also, inconclusive. Since most IFIs are based in the developing economies, they are neglected often by the researchers. Until now, there existed no study as such which examined the effects of IC and CG-features on the IFIs' performance. This left a gap in the literature. This research study aimed to fill this gap and to open new avenues for future researchers.

2.3 Research Objectives and Research Questions

This research's primary objective was to examine, to what extent, IC and governance CG affected the performance of 64 IFIs operating in ten different geographical locations for the period 2007 to 2011, while controlling for firm-specific characteristics. Specifically, it sought to answer the following research question:

Research Question 1: To what extent, do IC efficiency (human capital, structural capital and capital employed) and corporate governance features affect the accounting (ROA) and market-based (Tobin's Q) performance of IFIs for the period 2007 to 2011?

The research's second objective was to analyse the effects of IC and CG features on the sampled IFIs' performance before and after the financial crisis. Specifically, it sought to answer the following research question:

Research Question 2: To what extent do, IC efficiency (human capital, structural capital and capital employed) and corporate governance features affect accounting (ROA) and market-based (Tobin's Q) performance of IFIs before and after the financial crisis?

Finally, the research aimed to explore the effects of IC, CG and firm-specific characteristics on the performance of FFIBs and Windows. Specifically, it sought to answer the following research question:

Research Question 3: To what extent, do IC efficiency (human capital, structural capital and capital employed) and corporate governance features affect accounting (ROA) and market-based (Tobin's Q) performance of fully-fledged Islamic banks and Shariah-windows for the period 2007 to 2011?

2.4 Contributions of the Study

Since research on Islamic finance is still at an early stage, the study on the extent of IC efficiency in IFIs makes a significant contribution to new knowledge. Hence, there is no study as such which focuses on the effects of IC or CG features on the IFIs'. Therefore, this study's key contribution is that it is amongst the early studies measuring the effects of IC and CG-features on the IFIs' profitability and market valuation. The study aims, also, to enrich the literature in management accounting (in the context of Islamic finance) in particular, and accounting generally.

The reported research departs from other research studying the impact of IC on firm performance at a national level and does not control for CG features. This study addressed this omission from the literature in that it investigated the impact of IC and

CG features on the performance of sampled IFIs located in ten different countries worldwide.

Since this study is amongst the early work examining the association between IC, CG-features and IFIs' performance, its potential contribution is considerable. This study's findings will have several implications for IFIs since it will provide the Islamic finance industry with an opportunity to analyse critically the contribution of each component of VAIC *viz*. Human Capital Efficiency (hereafter referred to as HCE), Structural Capital Efficiency (hereafter referred to as SCE) and Capital Employed Efficiency (CEE) in creating value. The study highlights, also, the importance of IC features as the key factor which can enhance an IFI's ability to maintain its profitability and competitive position in the market. The results may provide, also, guidance on what kind of firm-specific features i.e. firm-size, listing-status, type of auditor, and operating region enhances the influence of IC and CG-features on IFIs' performance.

Equally, the study aims to contribute guidelines for academics in the field of accounting and finance, particularly Islamic banking and finance, in planning syllabuses and curricula for their courses. Hence, the study hopes to contribute empirically and academically. In relation to the potential contributions stated above, it is hoped that this study will become a source of motivation for more academic and non-academic research in the field of Islamic finance and management accounting.

2.5 Research Methodology

The study used the quantitative research method in which secondary data comprising of annual/financial statements of selected IFIs was used to extract data. The population of this study was IFIs both FFIBs and Windows operating worldwide. The selection of this study's sample of IFIs was based on the Bankscope database which had a unique collection of micro-level banking information for different countries and was used widely for international studies and policymaking (Demirgüç-Kunt and Detragiache, 1998). Data related to the governance-specific variables, such as board-size, non-executive directors, role duality, Shariah supervisory board, and size of the audit committee was not readily available on the Bankscope database. The reason for using annual reports was because they were "the most widely distributed of all publicly produced documents of an organization, and management has complete editorial control

of the discretionary disclosure of information in this document (Campbell, 2000, p. 85)". Given this study's longitudinal objective, the time period, established for the survey of annual financial data, was set between 2007 and 2011. There are three basic reasons to support the selection of this time period. Firstly, a new generation of Islamic finance, which is more innovative and diverse, has emerged during the first decade of the 21st century as the doctrine is undergoing a new aggiornamento. This is urged mainly by the factors such as globalization of economies, dramatic changes in political-economic environment and Islamic insurgence (Nawaz, 2013a; Nawaz, 2013b). Secondly, Islamic finance has documented its stability during the recent global financial crisis (Hasan and Dridi, 2010; Baele et al., 2011; Beck et al., 2013) and the Islamic finance industry is expected to enjoy the same trends in the upcoming years (Ernst and Young, 2013; Johnes et al., 2014). Lastly, the West trialed, also, the potential of the Islamic way of banking during this period. The UK regulator –the Financial Services Authority (FSA), for example, granted five banking licenses for the Islamic retail and investment banks between 2004 and 2008 (Kay, 2004; Wilson, 2005; Nawaz 2013a). All such factors contributed equally to making the Islamic financial industry an attractive area for potential research. Hence, the significance of the study was justified. A final sample, comprising of 64 individual IFIs and 320 firm-year observations for the fiscal years 2007 to 2011 was obtained after eliminating IFIs with insufficient financial and/or corporate governance information. The statistical software package (STATA Version 13.1) was used to analyse data. The research model was developed as an aid to identifying the research variables and to help in testing the research hypotheses developed from the research questions.

2.6 Scope and Constraints of Study

This is an exploratory research study and encompasses Islamic finance, IC and CG features. It was carried out in the context of Islamic financial institutions operating in ten different geographical locations worldwide for the period 2007 to 2011. The scope of the research, including effects of IC, CG-features, and firm-specific features on the IFIs' accounting and market-based performance, was based on ROA and Tobin's Q respectively. This was to find out whether IC and CG-features had any effects on IFIs' performance of during the period under study. Secondary data was used; this consisted mainly of Bankscope database and a review of annual reports.

The study was not free from constraints and limitations. This study's main limitation lay in its methodological tool (value added intellectual coefficient, VAIC) for measuring IC. Many studies challenged the VAIC model (see Chang, 2007; Ståhle et al., 2011). Nonetheless, there existed no single method of measuring IC. The VAIC method uses quantitative data and, therefore, VAIC's use was justified because secondary data was used in this study and, hence, was quantitative in nature. Arguably, this data was reliable and validated since it was drawn from the audited data disclosed in annual reports/financial statements of the selected Islamic financial institutions. Chapter 9 discusses other inherent constraints.

2.7 Summary of Significant Findings

The key findings of the research are as follows:

1. IC has a significant positive relationship with the accounting performance of IFIs, based on ROA.

2. IC has a significant positive relationship with the market performance of IFIs, based on Tobin's Q.

3. CEE, HCE, listing status, and firm-opacity are pivotal in determining the IFIs' accounting and market-based performance.

4. IC helps to sustain profitability of IFIs, measured by ROA at all times i.e. pre- and post-crisis period and, therefore, IC is the main value driver for IFIs.

5. Islamic finance industry is not homogeneous as such since not all institutions, which offer Shariah-compliant products, are FFIBs. IFIs can be classified as FFIBs (FFIBs) and Shariah-windows[1] (Windows).

[1]Shariah-windows take different forms. A lively example of Shariah-windows is of HSBC-Amanah, which is wholly owned subsidiary of HSBC group but claims to operate distinctly from its mother company. Likewise, Maybank Islamic Berhad is a wholly owned subsidiary and the Islamic banking arm of Maybank Group. Maybank Islamic Berhad is incorporated in Malaysia, however, it offers through its branches Shariah-compliant products and services in several countries such as Bahrain, Pakistan, United Kingdom etc.. Another example is Lloyds 'Islamic Account' offered by Lloyds Bank, in which Shariah approved money management is offered to the clients. The account bears no credit or debit interest and has no minimum balance requirement. All such banks are treated as Shariah-windows since they evolve simultaneously in Islamic banking but their core business activity is conventional banking business.

6. FFIBs possess strong profitability and market valuation at all times. Further profitability of FFIBs is manifested by CEE, HCE and firm-complexity, whereas FFIBs' market performance is manifested by CEE, HCE, firm-size, and board-size.

7. Profitability of Windows is manifested by HCE, whereas firm-size and listing status play a pivotal role in determining the market valuation of Windows at all times.

8. Corporate Governance (CG) features lend little help to sampled IFIs in sustaining profitability and market valuation.

2.8 Organisation of Thesis

The thesis consists of nine chapters in total. Results are discussed in the context of existing relevant literature and empirical studies.

Following the introductory chapter, Chapter 2 presents the literature review in the area of IC. The chapter provides an insight into the literature on IC. Firstly, it traces the roots of the IC concept by presenting a review of definitions and classification frameworks of IC and knowledge management as well as highlighting the importance of IC for business enterprises in creating competitive advantage. Then, there is a review of empirical studies on IC to date. The Chapter concludes by identifying the research gap in the current literature. Additionally, Chapter 2 reviews critically various methods of measuring the performance of IC. Appropriate methods for measuring both accounting and market performance of IFIs are selected and justified.

Chapter 3 describes the phenomenon of Islamic banking and finance. Additionally, it establishes, also, the relationship between various sub-components of IC *viz*. human IC, structural IC and financial capital and Islamic way of banking.

Chapter 4 describes the theoretical framework and presents the research hypotheses to be tested. There are three main research hypotheses to be tested in relation to the effects of IC, CG and firm-specific characteristics on the IFIs' performance in achieving the first research objective. The fourth research hypothesis is related to the effects of IC, CG and firm-specific characteristics on the IFIs' performance before and after the financial crisis, thus, addressing the second research objective. The fifth research hypothesis is related to the effects of IC, CG and firm-

specific characteristics on the performance of FFIBs and Windows; this is the third research objective.

Chapter 5 describes the research method adopted in this study and the research design relating to the collection of data, the source of data and the method of analysis. The chapter explains this study's research strategy, sampling method and sources of the data respectively. The chapter describes, also, the proxies and measurement of the dependent and independent variables and concludes by describing the procedures in analysing the panel data for regression models.

Chapter 6 reports the findings for this study's first research objective which is to investigate the effects of IC efficiency and CG characteristics on the IFIs' performance, while controlling for firm-specific characteristics for the period 2007 to 2011. The research considers, also, the effect of IC elements *viz.* HCE, SCE and CEE respectively on the IFIs' performance (i.e. accounting performance based on ROA and market performance based on Tobin's Q).

Chapter 7 presents the finding related to the second research question. It explains the effects of IC and CG mechanisms on IFIs' performance before and after the financial crisis by dividing the period into pre-crisis (2007–2008) and post-crisis (2010–2011).

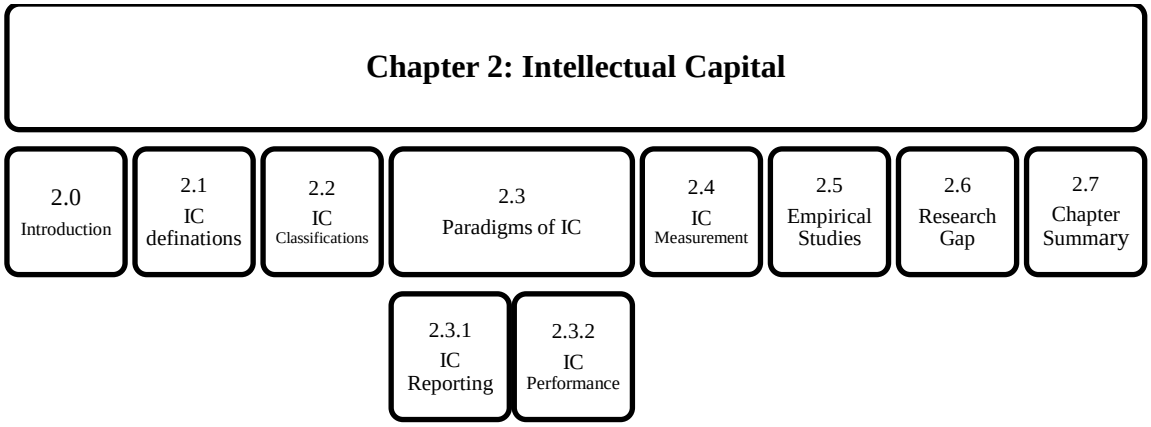
Chapter 8 reports the findings for this study's third research objective which was to investigate the effects of IC efficiency and CG characteristics on the performance of FFIBs and Windows, while controlling for firm-specific characteristics for the period 2007 to 2011.

Finally, Chapter 9 concludes this research and discusses findings from the empirical analysis, presented in Chapters 6, 7, and 8, and discusses, also, this study's contributions; suggests recommendations; and highlights the limitations of the research. Lastly, it suggests potential areas for future research.

Chapter 3: Intellectual Capital

2.0 Introduction

This chapter presents a root map of Intellectual Capital Research (ICR) in which the various definitions and concepts of IC, sub-components of IC and milestones in the ICR are discussed in particular. The chapter provides a comprehensive concept of the IC phenomenon as well as the research focus, particularly in services industries e.g. banking and finance. Empirical studies on IC, in the context of non-financial and financial sectors, are reviewed critically and the research gap is identified. Furthermore, different methods of measuring IC performance are reviewed critically and the appropriate IC performance measure for this study is selected and justified.



This chapter's objective is to provide an insight into the literature on IC. Firstly, in section 2.1, it traces the roots of the IC concept by presenting a review of definitions followed by classification frameworks of IC in section 2.2. Paradigms of IC are explained in section 2.3 and methods of IC measurement are discussed in section 2.4. Then, this is followed by a review of empirical studies on IC to date and, in section 2.6, the chapter concludes by identifying the research gap in the current literature while section 2.7 provides a summary of the chapter.

3.1 Intellectual Capital Defined

The conceptual roots of IC have been rapid and far-reaching (Bontis, 2001). Generally, IC means more than just "intellect as pure intellect" but rather incorporating a degree of

“intellectual in action” (Hudson, 1993, p. 15). There is no generally accepted definition of IC. However, many definitions of IC have been suggested. The underlying concepts in these definitions include the notions that IC is something knowledge based, captured in an identifiable form, and useful in organizations.

Stewart and Ruckdeschel (1998) posited that every business relied increasingly on knowledge and old-fashioned experience. Added together, this knowledge is IC and it can be defined as the sum of everything everybody in the company knows that will give the company a competitive edge in the market. According to Hall (1992, p. 136) “intangible assets are value drivers that transform productive resources into value added assets”. Sveiby (1997) described IC as the knowledge, experience, employee intellect and knowledge resources stocked up in an organization's databases system processes, culture and philosophy.

The value-creating capability of IC is at the crux of these definitions. Accordingly, the literature identified various capabilities of IC. Value creation, profit generation and knowledge for competitive advantage were among the most commonly referred capabilities of IC found in the extent literature and they are discussed further in the following section.

3.1.1 IC as Value Creator

Various authors stressed the value creating capability of IC. For instance, Hall (1992), , stated that “intangible assets are value drivers that transform productive resources into value added assets (p. 136)”. Wriston (1993, p. 1) argued that “the new source of wealth is not material, it is information, knowledge applied to work to create value”. Likewise, Brooking (1996) classified IC as market assets, human-oriented assets, Intellectual Property (IP) assets and infrastructure assets that, when combined with an organization’s other productive resources, would lead eventually to value creation and increased productivity of a firm (Edvinsson and Malone, 1997).

Also, later research supported this idea that “intellectual capital is the collection of intangible resources and their flows where intangible resource is any factor that contributes to the value generating processes of the company” (Bontis et al., 1999, p. 397). Heisig et al. (2001, p. 60) opined that "intangibles are defined by their value drivers". Rastogi (2003, p. 230) suggested that “IC may properly be viewed as the

holistic or meta-level capability of an enterprise to co-ordinate, orchestrate, and deploy its knowledge resources towards creating value in pursuit of its future vision".

3.1.2 IC as Profit Generator

On the other hand, many researchers highlighted, also, the profit generation potential of intangibles. Stewart and Ruckdeschel (1998) treated IC as intellectual material i.e. knowledge, information, intellectual property, experience that could be put to use to create wealth. Brennan and Connell (2000, p. 1) considered IC to be the "knowledge-based equity of a company" and hence, "IC is knowledge that can be converted into profit (p. 34)". There is another argument that intangibles or IC assets are non-physical claims subject to future benefits. For, instance Lev (2000, p. 5), used the terms intangibles, knowledge assets and intellectual capital all referring essentially to the same thing "a non-physical claim to future benefits".

3.1.3 IC Knowledge as Competitive Advantage

Klein and Prusak (1994) viewed IC as packaged useful knowledge whereas Hudson (1993, p. 16) stated that "intellectual capital is the combination of genetic inheritance, education, experience and attitudes about life and business". Likewise, Guthrie and Petty (2000) stated that knowledge management is about the management of the intellectual capital controlled by a company. Similarly, de Pablos (2003, p. 63) stated that "Knowledge based resources that contribute to the sustained competitive advantage of the firm form intellectual capital". Hence, IC is "the possession of knowledge and experience, professional knowledge and skills, good relationships, and technological capacities, which when applied will give organizations competitive advantage (CIMA, 2001, p. 2)".

Over the past two decades, a common terminology of IC developed and different approaches in defining IC were introduced. Over the years, various researchers used several terms and concepts of IC to define IC. The term 'intellectual capital' is found most commonly in the legal and management literature while the term 'knowledge assets' is adopted by economists and 'intangibles' is common in the accounting literature.

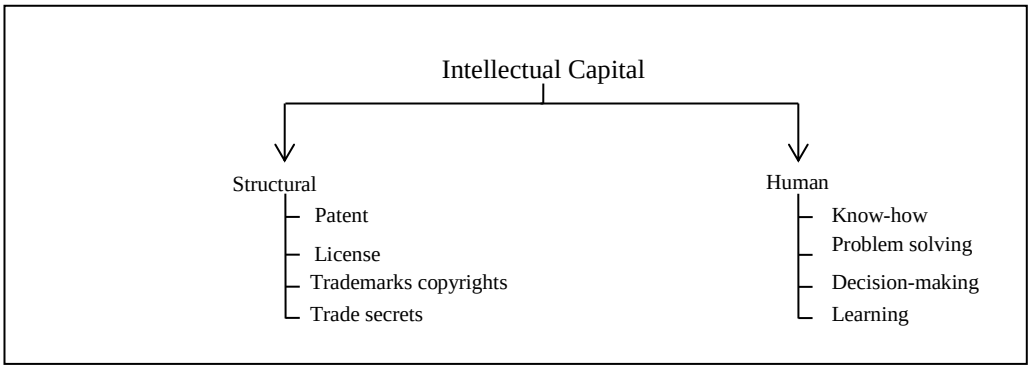
3.2 Components of Intellectual Capital

Most IC studies agreed that IC was not a unidimensional construct but resided at various levels (individual, internal- and external-organization). For example, human IC can be viewed as resting in the people employed by an organization (at an individual level) while structural IC is latent within the company (at the organizational level).

The task of constructing a taxonomy of IC implies, also, defining it. Theoretical research by has various authors e.g. Robinson and Kleiner (1996), Roos et al. (1997) and Edvinsson and Malone (1997) attempted to define and classify IC, and Sullivan (2000) suggested two categories of IC.

Robinson and Kleiner (1996) suggested some examples of human capital such as know-how, decision-making capabilities, problem solving skills, and learning and structural capital i.e. patents, licenses, trademark copyrights, and trade secrets. Furthermore, they posited that firms, which had more of these skills and utilised them to create value, would be rated as high value firms in the marketplace.

Figure 2.1: *Schematic Breakdown of Intellectual Capital*



Source: *Robinson and Kleiner (1996)*

Roos et al. (1997) supported the above view and classified IC into thinking (human capital) and non-thinking (structural capital) parts. Sullivan (2000, p. 227) supported, also, the view of Robinson and Kleiner (1996) who equated IC to knowledge. Furthermore, Sullivan (2000, p. 20), suggested that IC contained basically "knowledge, lore, ideas and innovations and subdivides IC into human capital and intellectual assets, where human capital refers to people and their knowledge, know-how that are not directly commercializable and intellectual assets (new ideas and innovations) that can

be transformed into commercializable assets, in which firms have rights of ownership. Hence, in Sullivan's view, it is to the advantage of the firms to transform the new knowledge and know-how of their human capital into commercializable assets such as tangible goods or services and supporting intellectual assets (administration and infrastructure)".

In the same vein, the Organization for Economic Co-operation and Development[2] (1999) described IC as the economic value of two categories of intangible assets of an organization:

(i) Organizational (Structural) capital; and

(ii) Human capital

Edvinsson and Malone (1997) defined IC as the possession of the knowledge, applied experiences, organizational technologies, customer relationships, and professional skills that provide a competitive edge in the market and an insight about future earning capabilities. They viewed IC as being comprised of two primary components: human IC (e.g. based around employees who leave the organization at the end of a working day); and structural IC (e.g. the embodiment, empowerment, and supportive infrastructure of human IC). Due to its diverse components, structural IC is divided further into customer IC and organizational IC, in turn, this divides into innovation IC and process IC (e.g. a firm's relationships with its customers and suppliers). Edvinsson used this defined structure for measuring IC at Skandia[3] AFS. Similarly, Sveiby (1997, p. 10-11) divided IC into three similar dimensions: employee competence; internal structure; and external structure. The author posited that:

[2]Intellectual capital is described as the economic value of two categories of intangible assets of a company: organizational capital (e.g. hardware, proprietary software systems, databases, organizational structure, distribution networks, supply chains, patents, trademarks and everything else of organizational capability that supports those employees productivity) and human capital i.e. human resources within the organization and resources external to the organization comprises the combined knowledge, skill, innovativeness and ability of the company's individual employees, company's values, culture and philosophy (OECD, 1999).

[3]Skandia AFS is a Swedish insurance company. Its relevance to the literature of intellectual capital is due to the fact that it published the world's first ever intellectual capital report in 1994.

"Employee competence involves capacity to act in a wide variety of situations to create both tangible and intangible assets. …internal structure includes patents, concepts, models, and computer and administrative systems. …the external structure includes relationships with customers and suppliers. It also encompasses brand names, trademarks, and the company's reputation or image".

Meritum (2002, p. 63) offered a definition of IC; this defines individually all three major elements of IC: (1) human capital which employees take with them when they leave the firm; (2) structural capital which stays within the firm at the end of work; and (3) relational capital which are all resources linked to the firm's external relationships. Table 2.1 shows a summary of the definitions for the three intellectual capital categories. These three forms of IC can be leveraged to create competitive advantage and value for stakeholders. At the same time, while the terms, used to describe IC are on occasion different, they refer basically to: human capital, the knowledge embedded in people; structural capital, the knowledge embedded in the organization and its systems; and relational capital, the knowledge embedded in customers and other relationships external to the organization (Guthrie et al., 2012, Dumay and Garanina, 2013).

Table 2.1

Definition of IC in Three Categories

Human Capital	The knowledge that employees take with them when they leave the firm. Includes the knowledge, skills, experiences and abilities of people. Some of this knowledge is unique to the individual, some may be generic.
Structural Capital	The knowledge that stays within the firm at the end of the working day. Comprise the organizational routines, procedures, systems, cultures, databases, etc.. Some may be legally protected and become Intellectual Property Rights, legally owned by the firm under separate title.
Relational Capital	All resources linked to the external relationships of the firm, with customers, suppliers or R&D partners. Comprises that part of human and structural capital involved with the company's relations with stakeholders (investors, creditors, customers, suppliers, etc.) plus the perceptions that they hold about the company.

Source: Meritum (2002)

Synthesizing the above discussion, there is a broad consensus that IC contains human IC, structural IC, and relational IC (*See, inter alia*, Brooking, 1996; Edvinsson and Malone, 1997; Sveiby, 1997; de Pablos 2003). These three forms of IC work together

(Stewart, 1997) to enable a firm to transform its knowledge and skills into competitiveness and wealth (Edvinsson and Malone, 1997; Rylander et al., 2000). The following section discusses the three broadly accepted elements of IC.

3.2.1 Human Intellectual Capital (Human IC)

The combination of factors, possessed by a firm's individuals and the collective workforce, is referred to as human IC. This encompasses knowledge, skills, and technical ability; personal traits such as intelligence, energy, attitude, reliability, and commitment; ability to learn including aptitude, imagination and creativity; and desire to share information, participate in a team, and focus on the goals of the firm (Abeysekera 2008a). Several authorities recognised human IC as the central component of IC (e.g. Roos et al., 1997, Sullivan 2000) reasoning that its extraction created the firm's accumulation of capital (Gates and Langevin, 2010).

The literature on organizational learning points out that organizations do not create knowledge either in or of themselves, but employees do (Chang 2007). Hudson (1993, p. 16) treated human IC as "a combination of four factors; genetic inheritance, education, experience, and attitudes for creating business value and solving business problems". For example, Stewart and Ruckdeschel (1998, p. 86) viewed human IC as representing what people thought and in their own words;

> *"Money talks, but it does not think; machine perform, often better than any human being can, but do not invent ...primary purpose of human capital is innovation, whether of new products and services, or of improving in business processes".*

Likewise, Edvinsson and Malone (1997) and Sveiby (1997) established that human IC incorporated employees' skills, knowledge and experience which were required to act in different situations to create tangible and/or intangible assets.

Given its nature, human IC is inseparable from its bearer (Mention and Bontis, 2013) and is neither owned nor fully controlled by the firm (Bontis, 2001). In the same vein, Roslender and Fincham (2001) maintained that human IC was a subset of IC which encompassed the stock of attributes that a firm's employees provided in exchange for wages and salaries. Human IC includes a range of familiar constituents such as training and skills; experience and expertise; ingenuity; commitment; teamwork

etc.; attributes referred to previously as human assets or human resources. Furthermore, this view was supported by the work of Mayo (2001, p. 33) in which human IC was referred to as "the people themselves, loaning their personal human capital which constitutes their individual capabilities, personal knowledge, experience and commitment to the organization".

Such individual knowledge, expertise and skills in (Mention and Bontis, 2013, p. 289) "represent valuable intellectual resources and a source of sustainable competitive advantage, provided that firms are able to effectively manage and leverage this knowledge and expertise embedded in individuals". Li et al. (2008) were of the view that human capital was "thinking and doing capital"; this captured the employees' creativity, their knowledge, skills and professional experience. Bontis et al. (2000) were concerned that the knowledge, which employees brought and took with them when they joined or left the firm, could result in the loss of corporate memory and, hence, become a threat to the organization. Nonetheless, all intellectual assets are maintained and grown by people and without them will wither away (Mayo 2001). Hence, people (human IC) are a unique form of asset. They possess their own personal capital which they can withdraw from an organization at any time. It is important to recognise that human capital is not limited only to employee's capabilities to solve customers' related problems. Human IC is a broader concept which, in a metaphorical way, is a pool of capabilities embedded in an organization's internal sources (personnel) and external sources (i.e. suppliers, distributers and contractors). Consequently, it is necessary to ensure that human IC is managed effectively in order to reproduce and ideally increase competitive advantage.

The role of human intellectual capital in the creation of value is well acknowledged in the literature. Human IC encompasses all knowledge and competencies of a firm's workforce and by structuring the management and sharing of this knowledge, a firm can develop key competencies which are difficult to replicate and, thereby, gain a sustainable competitive advantage (Gates and Langevin, 2010).

3.2.2 Structural Intellectual Capital (Structural IC)

Structural capital in Edvinsson and Malone (1997, p. 35) might be described best as "the embodiment, empowerment and supportive infrastructure of human capital".

Likewise, Zéghal and Maaloul (2010) posited that structural IC constituted the supportive infrastructure that enables human IC to function in an organization. Saint-Onge (1996) stressed, also, the relationship between human IC and structural IC and treated it as a "double-arrow dynamic", that is, human capital is what builds structural capital, and the better the structural capital, the better the human is likely to be. Thus, structural IC can be defined as the knowledge that is created by an organization and cannot be separated from the entity (Joshi et al., 2013). Also, Edvinsson and Malone (1997) recognized that structural IC was everything else of organizational capability which supported employees productivity.

Structural IC includes all the non-human storehouses of knowledge in organizations comprising of all the structures, procedures, routines, administrative systems, cultural aspects, and databases that permit an organization to codify, organize, and diffuse internally the knowledge and experiences generated by the human IC (Edvinsson and Malone, 1997; Stewart, 1997; Gates and Langevin, 2010). Stewart and Ruckdeschel (1998, p. 108-109) viewed structural IC as:

> *"Knowledge that doesn't go home at night… It belongs to the organization as a whole. It can be reproduced and shared… technologies, inventions, data, publications,… [and] strategy and culture, structures and systems, organizational routines and procedures…".*

This implies that subsumed under structural IC is everything that stays within the boundary-line of an enterprise at the end of a working day. It consists mainly of infrastructure assets and intellectual property which help the organization to exploit the IC. It includes all non-human storehouses of knowledge in organizations ranging from tangible assets protected by law such as copyrights, patents, databases, trademarks, computer and software to corporate culture, trust amongst employees, transparency, management processes, information system and all other elements that allow for better productivity of employees (de Castro and Sáez, 2008;Joshi et al., 2013).

3.2.3 Relational Intellectual Capital (Relational IC)

Also referred to as customer capital (Bontis 1998), relational IC is the depth (penetration), width (coverage), attachment (loyalty) and profitability of customers

(Saint-Onge, 1996). Relational IC integrates the knowledge about relationships with the firm's external partners such as customers, suppliers and local communities (Gates and Langevin, 2010); this creates value for the firm through improved market shares, paced supply networks, quality assurance and loyalty.

Mention and Bontis (2013, p. 291) simplified relational IC to be "the ability of a firm to create relational value with its external stakeholders. Organizations gain manifolds when they build relational IC, e.g. customer and brand loyalty, customer satisfaction, market image and goodwill, power to negotiate, strategic alliances and coalitions". However, Joshi et al. (2013, p. 267) warned that "it is not just important to create relational IC. The successful organization should be able to maintain its relational IC as well".

In other words, customer capital represents the potential which an organization has due to ex-firm intangibles (i.e. knowledge embedded in customers, suppliers or related industry association) which enables companies to understand what customers want in a product or a service which is better than their competitors. In turn, this means working closely with the customers and, then, the company will be more competitive than its competitors.

3.3 Paradigms of Intellectual Capital

IC can be viewed mainly from two different aspects: IC reporting; and IC measurement. The following sections discuss the aforementioned.

3.3.1 IC Reporting

One of the criticisms facing financial accounting framework is that it is inadequate and fails to communicate the most important assets and resources of today's business. The traditional financial reporting system, based on tangible assets and evaluation of a firm performance with tangibles, fails to reflect a wide range of value-creating intangible assets, giving rise to increasing information asymmetry between firms and users (Rylander et al., 2000, Barth et al., 2001, Holland 2003). In order to reduce the information asymmetry, firms can choose voluntarily to disclose information on immaterial assets.

Cañibano et al. (2000) urged for greater voluntary IC disclosure as an ehancement of financial reports. The proponents of voluntary IC disclosure argued that IC disclosure was beneficial for several reasons (Williams, 2001; Burgman and Roos, 2007):

(i) It mitigates the information asymmetry problem and, hence, the agency problem.

(ii) It has positive effects on the firm's external reputation, trust and confidence from all stakeholders in the firm's management.

(iii) Such disclosure strategy assists a firm to reduce its perceived risk because an open disclosure strategy supposedly results in a better assessment of future wealth creation capabilities.

(iv) IC disclosure reduces the firm's cost of capital.

In response to the call for increased IC disclosures, a number of studies on the nature and extent of IC disclosure in corporate annual reports were conducted in almost all parts of the world (see Appendix 2.1 for a summary of these studies).

3.3.2 Measurement of Intellectual Capital

Specific focus on the measurement of IC was concerned with the creation of frameworks, indices and guidelines to support the initial concepts (Sveiby, 1997; Bontis et al.; 1999), although none of the above was developed in accordance with accounting principles. Yet, it encouraged the researchers to develop frameworks for IC measurement. As a result, various attempts were made to develop metrics that informed strategy formulation and implementation; improved disclosure; benchmarked performance; and prediction on future business performance (Marr and Chatzkel 2004).

Young et al. (2009) opined that intangible assets (IC) were valuable assets which determined a firm's future. Therefore, it is important to measure IC so that the information from the measurement can be used in strategic decision making. However, Bukh (2003) stated that IC was a fragile construct and it was very complex to measure. Catasús et al. (2007) suggested that we had entered into an age of organizational measurability whereby measurements had a strong bearing on today's knowledge-intensive society. Increasing attention on the pivotal role played by IC in the value

creation process has resulted in many concepts and measurement models being suggested to measure intangibles.

3.3.3 Intellectual Capital and Performance Measurement

Performance measurement, in Kalbers and Fogarty (1993, p. 75), is a "mystery…complex, frustrating, difficult, challenging, important, abused and misused". Nonetheless, it is vital for any firm to measure the performance of all its critical success factors to benchmark its market position and to identify its competitive resource base. Additionally, performance measures serve as tangible evidence useful not only for assessing how well the firm is executing its strategy but, also, for empirically testing the strategy (Choi et al., 2013). Markets around the globe have witnessed an industrial shift from being capital-intensive to knowledge-based with more intangible resources. The traditional performance measures fail to measure and monitor multiple dimensions of performance since they concentrate almost exclusively on financial aspects of the organisations (Berger and Bouwman, 2013 Dotzel et al., 2013, Chen et al., 2014). Therefore, new techniques are necessary to measure the value of intangibles and their impact on a firm's performance.

Traditional firms of the nineteenth into the twentieth century based their business on physical capital whereas modern firms of the twenty-first century are based on knowledge. Knowledge is today what once were land, manual work and money (Pulic, 2004). The traditional mind-set is still buying low and selling high; this is why costs are subtracted from income so that earnings can be calculated. The new approach defines a business as the organisation that adds value and creates wealth through knowledge (Drucker, 1995). That knowledge is embedded deeply in the employees who convert it into more or less value depending on their capabilities (Pulic, 2000). In order to manage that value creation, modern measuring tools are needed. Drucker (1992) puts the ever-increasing measurement dilemma:

> *"...a traditional measure is not adequate for business evaluation. A primary reason why traditional measures fail to meet new business needs is that most measures are lagging indicators. The emphasis of accounting measures has been on historical statements of financial performance. They are the result of management performance, not the cause of it".*

In a world where relentless technological change and shortened assets are of profound importance, non-financial indicators are essential for characterizing an organization's future financial performance (Amaratunga et al., 2001). The traditional financial measures fall short in assessing the performance of such firms with high intangible resources. Therefore, new techniques are necessary to measure the value of intangibles and their impact on a firm's performance.

3.4 Methods of Measuring Intellectual Capital (IC)

There is no universally accepted method for measuring IC. Nonetheless a few dozen measurement methods of IC can be identified in the relevant literature (Andriessen, 2004; Pike and Roos, 2004; Sveiby 2010).

Sveiby (2010) listed a total of forty-two methods of measuring intangibles. Among them were the balanced scorecard (Kaplan and Norton, 1992), the technology broker (Brooking, 1996), the Skandia navigator (Edvinsson and Malone, 1997), the intellectual capital index (Roos et al., 1997), the intangible asset monitor (Sveiby, 1997), the economic value added (EVA^{TM}) (Stewart and Ruckdeschel, 1998), and the VAIC^{TM} (Pulic, 2000; Pulic, 2004).

There were early attempts by Luthy (1998) and Williams (2001) to classify the various methods of IC measurement. Sveiby (2005) extended the work of Luthy (1998) and Williams (2001) and suggested that IC measurement approaches fell into four categories. This classification tends to involve: the Direct Intellectual Capital (DIC) methods; the Market Capitalization Methods (MCM); Return on Assets methods (ROA); and the Scorecard Methods (SC). Abeysekera (2008b) proposed, also, a similar classification. However, these classifications did not include VAIC^{TM} methodology. Chan (2009a) added this approach into the existing classification and rearranged them accordingly:

- Market Capitalization approach (MCM);
- Direct IC Measurement approach (DIC);
- Scorecard approach (SC);
- Economic Value-added (EVA^{TM}) approach; and
- VAIC^{TM} Methodology (the Austrian approach)

The aforementioned approaches are reviewed and discussed in the following section.

3.4.1 Market Capitalization Approach

The market capitalization or market to net book value (Sveiby, 1997; Dzinkowski, 2000) is the most popular and widely known indicator for measuring and reporting IC (Abeysekera, 2008b). The market capitalization approach suggests that a firm's IC can be obtained by subtracting the firm's net asset value from its observable market value. Market capitalization approach is based on the accounting paradigm of historical cost and balance sheet evaluation. Due to the high volatility in the markets, this approach may have problems since a firm's market value varies on daily basis, and may be subject to speculation in the capital market. Firms, with higher-stocks of intangible assets, are supposed to possess greater IC because there is a wider gap between their market and net book value (Sveiby, 1997).

Furthermore, the market capitalization approach does not assist managers to understand easily what IC is, how it exists or how it influences the dynamics of a business since it does not identify immediately the components of IC (Guthrie et al. 2001; Sveiby, 2005; Bontis, 2001; Chan, 2009a). Tobin's Q, developed by the Nobel Laureate economist, James Tobin, in the 1950's, IC-Index by Roos et al. (1997), and the Market-to-book value approach introduced by Stewart and Ruckdeschel (1998) are the most prominent examples of such approaches.

3.4.1.1 Tobin's Q

The 'Q' was developed by the Nobel Laureate economist, James Tobin, in the 1950's. Tobin's Q ratio is the ratio of a firm's market value to the replacement cost of its assets (Chung and Pruitt, 1994). If the former is higher than the latter, the firm is making a higher than normal returns on its investment. Traditionally, technology and human IC were associated with high q value.

The strength of this measure is that it addresses a significant weakness in the traditional accounting framework, namely, the measuring of assets using historical costs (Stewart and Ruckdeschel, 1998; Chung and Pruitt, 1994; Dzinkowski, 2000; Abeysekera, 2008b).

Starovic and Marr (2003) noted that Tobin's Q was argued to be more accurate than the market-to-book method because it used replacement rather than historic costs. Nonetheless, finding these replacement costs is more difficult than referring simply to a balance sheet. Similar to the market or value-based approach, the use of the market value as one of its key measures is its weakness. Thus, this measure cannot provide an accurate figure for individual intellectual assets. Its real value lies in trend analysis: if the q is falling, either the company is not managing its intellectual assets effectively or investor sentiment has moved against it as cited in Sofian (2004). This argument was supported by Abeysekera (2008b) who asserted that, since the assumptions underlying Tobin's Q indicator were anachronistic (as they related to the industrial era) and were more relevant to tangible than to intangible assets, its use was likely to result in a false indication of a firm's IC value .

3.4.1.2 Intellectual Capital (IC) Index

In Bontis (2001, p. 47) "IC-Index is an example of 'second generation' practices that attempt to consolidate all the different individual indicators into a single index, and to correlate the changes in intellectual capital with changes in the market". Roos et al. (1997, p. 80) asserted that the second generation practices still sought

> *"To improve the visualization of the value-creating processes of the company so that they can be managed comprehensively [but] in effect create a bottom-line for IC. This synthesis allows managers to assess the IC situation of a company holistically, whereas the first generation practices give information only on the single components of intellectual capital".*

Similar to most other measures of tangible assets "an IC-Index relies on value judgements, in the choice of weights, indicators, and even the assumption that IC is present and important in company operations" (Bontis 2001, p. 49). Although this charge of subjectivity in Andriessen (2004, p. 312) "can also be made of certain traditional accounting methods and assumptions", Roos et al. (1997, p. 83) argued that "at least IC measurement and especially a consolidated measure such as the IC-Index makes a larger part of the organization visible and open to valuation".

On a final note, "because the IC-Index takes past performance into account, it is subject to one-off special events, which can have a strong influence on moving the

index up or down for some years after the event" as quoted in Bontis (2001, p. 49). In contrast, Roos et al. (1997, p. 92) opined that "the IC-Index allows mangers to finally understand the effects a particular strategy has on the IC of a company and compare two alternatives to understand which one is preferable from an IC point of view".

3.4.2 Direct IC Measurement Approach

In this approach, a direct monetary value is assigned to estimate what a firm may consider to be individual components of the intangible assets pool (Chan, 2009a). These assets are identified and obtained from a series of audit questionnaires. The reporting may either take the form of a dollar value or be aggregated as coefficients. Technology broker by Brooking (1996) and Citation-weighted patents by Bontis (2001) are some examples of the direct IC measurement approach.

This approach was criticised due to its qualitative nature of the determination and identification of the so-called key intangible assets; this might be highly subjective (Bontis et al., 1999; Sveiby, 2005). Bontis (2001) was of the view that, in the absence of a generally agreed upon definition of IC, the DIC measurement approach seemed unlikely to become a universal method enabling uniform measurement and comparison of companies.

3.4.2.1 Scorecard Approach

Scorecards are used to generate indicators and may not require the assignment of a financial value to the IC components. The qualitative nature of these methods coupled with the lack of standardization could be argued to be a potential challenge facing their general adoption (Kaplan and Norton, 1992; Bontis, 2001; Sveiby, 2005).

3.4.2.2 Economic Value-added Approach (EVA^{TM})

EVA^{TM} was intended to be a comprehensive measure for studying the performance of the whole business. Chan (2009a) argued that, if we accepted the assumption that a firm's increase in EVA resulted only from the effective management of its knowledge assets and nothing else, then EVA might seem a reasonable proxy for measuring IC.

This is a challenging assumption to accept because tangible assets contribute, also, to the wellbeing of an organization as indicated by the resource-based view (Barney, 1991). IC alone may not function without the support of tangible assets such as stock, machinery and financial capital.

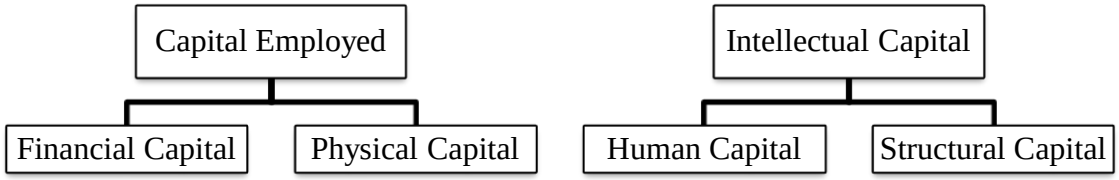
3.4.2.3 VAIC^{TM} Methodology

Rather than the historical and objective approach which has characterised financial reporting to date, valuation of intellectual capital requires immediate and imprecise measures (Chang, 2007). The value added intellectual coefficient (VAIC^{TM}), devised by the Austrian Intellectual Capital Research Centre (AICRS) under Professor Ante, (Pulic, 2000) measures the efficiency of key resources in companies. The VAIC methodology was widely used internationally and robustly tested (Pulic and Bornemann, 1997; Pulic, 2000; Pulic, 2004; Ho and Williams, 2003; Goh, 2005; Kamath, 2007; Muhammad and Ismail, 2009; Chang and Hsieh, 2011; Joshi et al., 2013) and regarded as a promising mechanism for measuring IC.

Unlike traditional accounting focuses on controlling costs, the VAIC introduces a novel concept of 'corporate intellectual ability' (Pulic, 2004). It refers to the total value creation efficiency of a company due to two key resources:

(i) *Capital Employed:* consists of financial capital and physical assets; and
(ii) *Intellectual Capital:* consists of human IC and structural IC

Figure 2.2: the VAIC^{TM} map



Source: (Pulic, 2004)

The basic assumption is that IC alone cannot operate independently without the support of, for example, financial and physical capital (Pulic, 2002; Tseng and James Goo, 2005, Biondi and Rebérioux, 2012). Simply stated, corporate intellectual ability, as measured by the VAIC coefficient, is an indicator of a firm's overall efficiency or

ability to use the total resources of capital employed and IC in creating value for the company. A higher VAIC value suggests better management utilization of a firm's value creation potential (Pulic 2004). The VAIC methodology provides information about the value creation efficiency of tangible and intangible assets within a company.

The VAIC model assigns explicit economic values, value added (VA) and capital employed (CE) to human capital (HC) and structural capital (SC) and, on this basis, generates an unambiguous VAIC index. The corporate intellectual ability or VAIC is defined as:

$$\mathbf{VAIC^{TM} = HCE + SCE + CEE}$$

Where,

- ICE = Intellectual Capital Efficiency
- HCE = Human Capital Efficiency,
- SCE = Structural Capital Efficiency, and
- CEE = Capital Employed Efficiency

The VAIC model measures and monitors the total value creation efficiency in a firm. More precisely, the VAIC indicates the total efficiency of value creation from all resources employed and reflects the efficiency of value created by the IC employed. Thus, VAIC is a relational index in which produced added value is compared to capital employed and human capital (i.e. employee expenses). When structural capital is zero or negative, VAIC may take zero of negative values. In practice, it is calculated as sum of the ratios of value added to capital employed and human capital as employee expenses (Ståhle et al., 2011).

Ho and Williams (2003) and Chan (2009a) advocated the use of VAIC methodology and opined that "necessarily, the verifiability of the data gathered for the measurements and compilation of the indicators is likely to receive as much attention as the general acceptability of the conceptual model and derivation on which the methodology is based. For example, all the data needed for the computation of VAIC may be found in a firm's audited financial reports. This enhances the objectivity of the computation, and is easily verifiable (p. 36)".

The VAIC model uses values from profit and loss statements and statements of financial position "to measure if there is any value adding occurring in a firm that can

be attributed to and stemming from its development of IC (Joshi et al. 2013)". The strengths of VAIC are that (Roos et al., 1997; Bontis et al., 1999; Sullivan, 2000; Firer and Williams, 2003; Goh, 2005; Tseng and James Goo, 2005);

- It is easy to calculate;
- It is consistent;
- It provides standardized measure, thus, allowing comparison between industries and economies;
- Data are provided by financial statements that are more reliable than questionnaires;
- It does not require sophisticated accounting knowledge and expertise to use or understand;
- It uses component factors that match well with many commonly accepted definitions of IC; and
- It can be applied to any size of organization.

The VAIC model of efficiency measurement was challenged by recent studies. Chang (2007) modified VAIC methodology by adding R&D expenditure and intellectual property (IP) components into VAIC whilst measuring IC. Chang (2007) reasoned that the sub-component of VAIC –SC efficiency might be incomplete since it did not take into consideration R&D expenses and intellectual property. Nowadays, R&D expenditures and intellectual property assets (Brooking 1996) play important roles in business. Therefore, those R&D expenses and intellectual property assets should be viewed as asset-like investments (Chang, 2007). Various authors outlined the advantages and limitations of VAIC as an IC measurement tool (see inter alia Bontis et al., 2000; Pulic, 2000; Ho and Williams, 2003; Pulic, 2004; Andriessen, 2004; Maditinos et al., 2011; Ståhle et al., 2011); these are summarized in Table 2.2.

Table 2.2

Strengths and weaknesses of VAIC™ Methodology

Advantages of VAIC™ Methodology	**Limitations of VAIC™ Methodology**
VAIC methodology highlights the week areas requiring intervention (Pulic 2000).	VAIC fails to measure IC in firms with negative book value or negative operating profit (Chu et al. 2011). In other words VAIC model does not generate valuable analysis in companies which have their input more than their output, and as a result, their productivity is low.
VAIC produces quantifiable, objective and quantitative measurements without the requirement of any subjective grading and awarding of scores or scales. It aids further computation and statistical analysis of a large sample size that may run into thousands of data items collected over a period of time.	The VAIC may not sufficiently identify the synergistic effects for value creation from interactions of different forms of capital (Andriessen 2004). Although the model depicts clearly how much each component (among human capital, structural capital, and capital employed) contributes to value-added. However, there may be interactions among the components of IC (Bontis et al. 2000), and so it may not be possible to calculate exactly the contribution to value creation from each resource. For instance, advances in IT or computer automation (which is an element of structural capital) could sometimes enhance labour productivity (which might then be interpreted as an increase in human capital efficiency). Therefore one may not be able to isolate the weighting of each factor in facilitating an increase in HCE, SCE, or CEE.
VAIC provides indicators that are relevant, useful and informative to all stakeholders, but not just shareholders, and with which they may also identify and compare the key components of IC in order to assess company performance.	VAIC approach involves an unsettled conception of IC capitalization via its components of human and structural capital (Ståhle et al. 2011).
VAIC uses financially oriented measures so that any indicators, relations or ratios computed may be used for comparison along with traditional financial indicators commonly found in business, which are based on monetarily derived units or measures.	VAIC methodology disregards the level of company risk, which is one of the most important factors determining company and IC value (Maditinos et al. 2011).
VAIC uses relatively simple and straightforward procedures in the computation of the necessary indexes and coefficients, which may be simple to understand, especially for management and business people who are accustomed to traditional accounting information.	R&D and Intellectual property (IP) both are omitted from VAIC model. R&D expenditure and IP are positively related with firms' market value and profitability, suggesting R&D expenditure and IP may capture additional information on IC (Chang 2007).
VAIC produces a form of standardized measurement. The indicators or indexes computed may be consistently applied to and used for comparison across divisional, company, industry and national level. In other words, benchmarking may therefore be possible.	
VAIC makes use of public or published financial data so that it may enhance the reliability of the measurement, and improve data availability.	
VAIC provides an IC measurement system that is consistent with the stakeholder view and resource-based view by using a value added approach.	
VAIC treats human capital or employees as the most important source of IC, which is consistent with all major IC definitions found in the literature.	

The above-mentioned critics initiated a debate as to whether the VAIC method was appropriate for measuring IC. Nonetheless, at this point in time, there exists no perfect method for measuring IC. These critics suggested, also, that future researchers ought to consider the introduction of other control factors and efficiency determinants; this might help in producing more precise and accurate results.

Despite the inherent limitations of VAIC as a method of measuring IC discussed above, the simplicity, subjectivity, reliability and comparability of VAIC make it an ideal measure for the context of the present research as this study is intended to make an original contribution to the existing IC literature by analysing the IC performance of IFIs operating in various geographical locations around the globe. The study aimed, also, to compare the IC performance of various types of IFIs i.e. FFIBs and Windows competing in the same markets.

3.5 Empirical Studies on Intellectual Capital

The empirical IC research can be divided into IC disclosure and IC measurement. The available literature on both streams is reviewed in the following sections.

3.5.1 IC Reporting

A significant amount of IC research is cross-sectional and has been concerned with gauging the extent to which it exists in organizations. It explains that IC is present in firms, where there is an association between IC elements and that IC has to be contextualized by other resources including physical and financial ones. Analysing firms' annual reports in various parts of the world, cross-sectional research has examined organizations' IC disclosure patterns (Murthy and Mouritsen 2011).

3.5.2 IC and Performance

IC is acknowledged widely as "the most important source of value creation and competitive advantage (Mention and Bontis, 2013, p. 286)". Competitive success is based now less on the strategic allocation of physical and financial resources and more on the strategic management of IC (Al-Ali, 2003; Tseng and James Goo, 2005; Holland

2010). However, the empirical evidence on the actual contribution of IC to the dynamics of the value creation process remains scarce in certain sectors i.e. Islamic banking and finance and geographical regions i.e. emerging economies. Furthermore, Guthrie et al. (2012) contested that value was no longer measured solely on the basis of financial outcomes and they suggested that value of activities that developed knowledge resources ought to be taken into account when measuring a firm value. They reasoned further that such an approach would help us to understand how people, internal processes and external relationships contributed to value creation, leading us to the challenge how to identify, measure and report on the value of our knowledge resources.

Research on the relationship between IC and performance has focussed on various industries such as IT (e.g. Wang and Chang, 2005; Chang, 2007; Seleim et al., 2007); biotechnology (Hermans and Kauranen, 2005); pharmaceuticals (Sharabati et al., 2010; Pal and Soriya, 2012); and manufacturing (Tseng and James Goo, 2005). Given the expanding services sector, there has been an increasing interest in this sector in general and, also, in the financial institutions specifically (see inter alia Murthy and Mouritsen, 2011, Mention and Bontis, 2013, Chen et al., 2014). The banking sector has experienced a dynamic and competitive environment due to globalization of economies and has grown as a knowledge concentrated sector (Mavridis, 2004). Marr and Adams (2004) argued that intangible assets were embedded in physical assets and considerable interactions between both types of assets created value. Likewise, Goh (2005) and Murthy and Mouritsen (2011) recognised the importance of physical capital but, nevertheless, argued that it was IC which determined the quality of services provided to customers, particularly in the banking sector. Moreover, the banking sector is a model sector for research on IC issues because the basic nature of the banking business is knowledge intensive (El-Bannany, 2008) and the entire banking sector staff is intellectually more identical (Kubo and Saka, 2002) and consistent than perhaps any other service or business industry in any economy (Chen et al., 2014). However, studies, conducted within the financial sector, have shown mixed evidence about the relationship between IC and the banks' overall performance.

3.5.2.1 Empirical Studies on IC Performance Measurement in Non-financial Sectors

Murthy and Mouritsen (2011, p. 626) maintained that "interactions between the elements of IC are noteworthy, yet, there are many variations on this model in the literature. Sometimes not all IC elements play a role because certain combinations of elements will favour either a human cantered or a technology cantered organization". Therefore, Johnson (2002, p. 419) suggested that "it may be counter-productive to measure all intellectual capital because sometimes the elements are highly involved in mediating managers' concerns but not always with similar and predictable effects". Correspondingly, Käpylä et al. (2012), in an attempt to examine the overall performance of a knowledge society, constructed a multidimensional performance measurement system to measure the national IC of Finland. The study demonstrated the importance of IC and stressed that IC ought to be measured from different perspectives such as strategic, dialogic and societal and not rely on a single measure.

Hermans and Kauranen (2005) empirically tested the impacts of IC to the anticipated future sales of SMEs within the biotechnology industry in Finland. The authors adopted a definition of IC (MERITUM Project, 2002) that theoretically regards IC as a composite of human IC, structural IC, and relational IC. The empirical evidence was gathered from 72 bio-tech firms through telephone interviews. The study found that the interactions between the three categories of IC explained two-thirds of the variance in the anticipated future sales of the sample firms. The study concluded that a well-balanced combination of human IC, structural IC, and relational IC implied value creation potential and high anticipated future sales. Tseng and James Goo (2005) investigated how to apply the concept of IC to value creation. The authors classified IC constructs into human IC, organizational IC, innovation IC and relational IC and employed IC perspective, resource-based view and a financial perspective to investigate the Taiwanese manufacturing sector. The study concluded that human IC exerted a positive influence on organizational, innovation and relational IC, with the latter two directly affecting corporate value.

Cuganesan (2005) investigated how IC information was related loosely and fluidly to managerial and corporate concerns. Based on a single in-depth case-study, the author found ties between the elements of IC to be transient. Likewise, Seleim et al. (2007) confirmed that the relationship between human capital and firms' performance

after empirically surveying the Egyptian software industry. These claims were supported further by Sharabati et al. (2010), who empirically tested the association between all three main components of IC *viz*. human IC, structural IC, relational IC and business performance within the Jordanian pharmaceutical firms. Evidence was gathered though a survey extended to 132 managers representing Jordan's association of pharmaceutical manufacturers. The study demonstrated that human capital had a positive and significant direct impact on business performance.

Although there was no denial about the significance of these studies in the early literature on IC, these studies did not provide, however, any surprising results. Most of these studies focused on high-tech industries, where both human and organisational IC was expected to be the main value driver and these studies found the same. Secondly, these studies were county specific and, hence, generalising the findings of these studies is not practical. Lastly, these studies did not explain if IC had any impact on the economic performance of these firms. Nonetheless, there were a handful studies which measured the effect of IC on the business performance of various organisations. The following section reviews these studies in chronological order.

3.5.2.2 Empirical Studies on IC Performance Measurement in Financial Sector

The classical authorities on IC research stressed that it was vital for knowledge-rich firms to measure their IC efficiency (Brooking, 1996; Edvinsson and Malone ,1997; Roos et al., 1997; Stewart and Ruckdeschel, 1998). The empirical examination of the relationship between IC and firm performance is particularly important in the banking sector since the financial sector has a concentration of intellectually rich knowledge (Chen et al., 2014). The financial sector is considered to be the backbone of any country's economy whereby banks are considered to be the financial lubricant runners as they provide intermediation services to stimulate economic growth. Berger et al. (2010) explained that banks accepted deposits from those in surplus and transferred these resources to those in deficit i.e. the borrowers and, hence, play a vital role in resource allocation[4]. Arguably, the economic growth of a country can be influenced by

[4]Chen et al. (2014, p. 563-4) cited that "traditional theoretical models of banks as financial intermediaries indicate that they help in reducing the friction of transaction costs (e.g. Benston and Smith, 1976) and

the performance of its banks. Hence, the performance of an economy's other business organisations are dependent upon the services provided by the banking sector. Therefore, it is important to examine to what extent banks are capable of utilizing their intangible or intellectual assets.

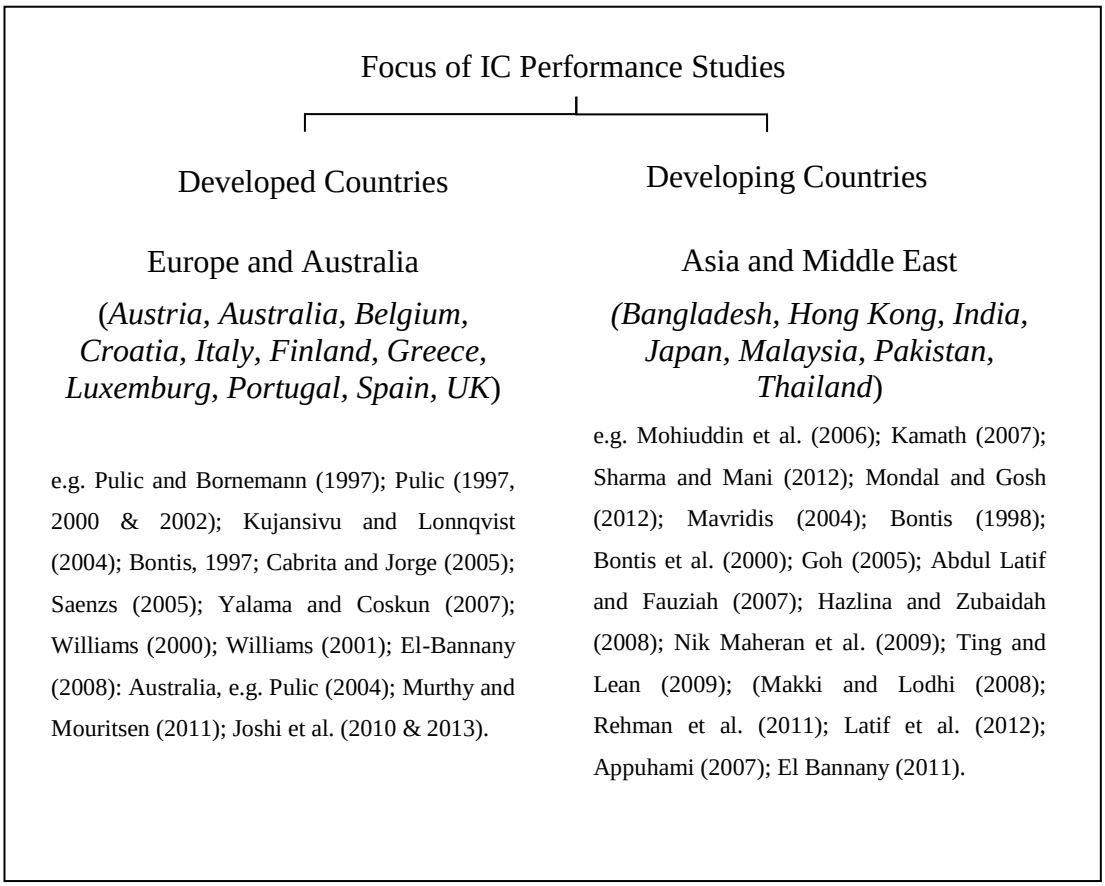
The banking sector around the globe has grown as knowledge concentrated sector since it has experienced a dynamic and competitive environment due to globalisation of economies, technological changes and deregulation. Driven by the globalisation of goods and financial markets, bank activities have changed greatly (Wilson et al., 2010). In response to these radical changes, banks have developed various business models in response to the increasing competition. In the International Integrated Reporting Council (IIRC 2011, p. 1), the business model is defined as "the organisation's chosen system of inputs, business activities, outputs and outcomes that aims to create value over the short, medium and long term". These models consist of "various integrated, interacting elements designed for value creation and matched to their competitive environment (Chen et al. 2014, p. 564)". Stewart and Ruckdeschel (1998) opined that value creation in the banking industry depended more on intangible assets than the physical assets and often these assets were recognized as IC (Bontis 1998).

In the last decade, a handful of studies reported empirical evidence on IC performance of the financial sectors around the globe. Figure 2.3 illustrates the focus of IC performance studies in the financial sector.

information asymmetry by acting as delegated monitors between lenders and borrowers (e.g. Diamond, 1984)".

Figure 2.3

Summary of IC Performance Studies in the Financial Sector



Sources: Researcher

An early research by Pulic (Pulic, 1997, 2002 & 2004) on Austrian, Croatian, and Australian banks revealed the importance of IC in the financial sector. The research results highlighted the fact that there was a strong interaction between IC and organizational corporate success. Pulic's research demonstrated that banks with higher expenditures on IC components were more profitable and had better financial performance. Pulic and Bornemann (1997) were the first to study the impact of IC in the banking industry. Their study measured the IC performance of the 24 largest Austrian banks for the year 1993-1995. They concluded that the increase of efficiency in IC was the simplest, cheapest and most secure way to ensure sustainable success and the most important resource of corporate success. Pulic (2002) measured the IC performance of Croatian banks for the year 1996-2000 using VAIC^{TM} as a methodological tool. The study revealed significant differences in the banks' ranking positions based on efficiency and performance.

In Japan, Mavridis (2004) analysed 141 Japanese banks for the period 2000 to 2001. The author focused on the actual status of human capital (HC) and physical capital (CE) and its impact on the 'intellectual' added value-based performance. The study found a significant positive relationship between value added and CE. Furthermore, Mavridis (2004) revealed that the best performing banks were those who mainly had good results in utilizing their IC particularly, human capital and less in the usage of their financial capital. In another study, Mavridis and Kyrmizoglou (2005) investigated the effect of HC and CE on the Greek banking sector using VAIC method for the period 1996 to1999. They reported that, as compared to CE, HC was more important as compared to value creation for banks. Likewise, in Spain, Sáenz (2005) found a clear positive relationship between HC indicators and market-to-book ratio. However, the study found no association between HC indicators and financial returns.

In the similar vein, Goh (2005) measured the IC performance of Malaysian commercial banks for the years 2001 to 2003, using VAIC^{TM} methodology. The result showed that value creation capability of Malaysia's commercial banks was largely attributed to human capital efficiency. This means investment in human IC yields a relatively higher return than investments in physical and structural IC. The author demonstrated, also, that foreign banks were more efficient than Malaysia's domestic banks but, in terms of value creation, domestic banks outperformed their foreign counterparts. A later study by Ting and Lean (2009) endorsed these claims. The authors examined the relationship between IC and financial performance of Malaysian financial institutions for the years 1999-2007. Using the same methodological tool, the empirical findings revealed that a significant positive relationship between VAIC and return on assets. Moreover, the study found that the profitability of the sampled banks was manifested mainly by HC and CE efficiency whereas a negative association between SC efficiency and financial performance was observed.

Accordingly, it was concluded that VAIC indicated efficiency in creating corporate value or the extent of corporate intellectual ability. In other words, an increase in value creation efficiency has a positive influence on a firm's profitability. Therefore, it is necessary to maximize the utilization of resources, specifically IC, for financial institutions in order to maximize profit.

In contrast, Cabrita et al. (2007), surveyed 53 affiliated members of the Portuguese Bankers Association using a questionnaire and provided empirical evidence

that IC was substantively and significantly related to the organizational performance in the Portuguese banking industry. Such strong association between IC efficiency and banks' performance was witnessed and reported, also, from Turkey and Thailand. In Turkey, Yalama and Coskun (2007) examined the impact of VAIC on bank's profitability and revealed that IC was a more important factor than CE (physical and financial capital) for banks listed on the Istanbul Stock Exchange Market. In Thailand, Saengchan (2008) studied the relationship between IC capability and financial performance of Thai commercial banks for the period 2000 to 2007. The study confirmed that IC acted as a major source of corporate advantage to Thai banks since efficiency of IC was associated strongly with the banks' profitability. Also, the study concluded that IC ought to be recognized as one of the major investments in driving the firm's sustainable growth. These findings were consistent with those of BA Ranjith Appuhami (2007), who found that firms' IC had a significantly positive relationship with its investors' capital gains and shares. The findings enhanced the knowledge base of IC and development of competitive advantages in emerging economies like Thailand.

In India, Kamath (2007) estimated and analysed the VAIC measuring the value-based performance of Indian banking sector for the years 2000 to 2004. The results showed that foreign banks were the top performers in HC efficiency while public sector banks were the top performers in CE efficiency. The study reported, also, vast differences in the performance of Indian banks in different segments. The author concluded that India's public sector banks seemed to have created the huge baggage of a large and inefficient work force which does not contribute anything to overall value creation. In the UK, El-Bannany (2008) applied variables to study the IC performance of UK banks for the years 1999-2005. The study found that investments in IT systems, banks' efficiency, barriers to entry and efficiency of investments in IC variables had a significant impact on IC performance. In a cross-border comparison, Young et al. (2009) studied the Asian banks of eight economies and found that CE and HC were the main factors which had created value for the banks.

Mondal and Ghosh's (2012) later study suggested that firms' IC was vital for their competitive advantage. However, the study found little evidence on the relationships between a bank's IC and financial performance indicators namely: profitability and productivity. The authors demonstrated, also, that, when the measure of IC was classified into major components, HCE played a major role in enhancing the

banks' returns. This suggests that an increase in HC investment enhances the banks financial performance and is consistent with the earlier findings of Goh (2005) in Malaysia. Also, Sharma and Mani (2012) did a comparative analysis of the HCE of India's private and public banks for the years 2005-2010 and found that, in the period under study, public banks made good progress in HCE performance. These findings were consistent with those of Mohiuddin et al. (2006) who examined the IC performance of 17 commercial banks in Bangladesh from 2002 to 2004. Their key finding was that all the banks in the study had higher HCE than other capital efficiencies. Joshi et al. (2010) reported similarly that Australian banks had relatively higher HCE than CEE efficiency and SCE efficiency. Joshi et al.'s recent study (2013) in the same sector re-confirmed these claims. Likewise, Mention and Bontis (2013) argued that, based on the questionnaire survey of both the Belgian and Luxemburg banking sectors, human IC contributed both directly and indirectly to business performance in the banking sector.

While the above studies were quantitative in nature, there were some recent studies which were qualitative in nature. For instance, Murthy and Mouritsen (2011) analysed the relationship between IC and financial capital using a case study approach. The authors stated that the relationships between IC and financial capital were challenging to specify because they were complementary rather than causal. Furthermore, financial capital is not only an effect but, also, an important input because the development of IC takes place through the firm's budgeting processes. Whereas Chen et al. (2014, p. 585) concluded that "an appropriate combination and interaction of intangibles and tangible/financial resources provides the means to improve the processes of financial intermediation, information intermediation and risk management in banks". The study sorted evidence via interviews with analysts and bank managers based in the UK.

3.6 Research Gap

In summary, the mentioned above studies examined the impact of IC and its components on business performance as measured by the firm's market valuation, profitability, productivity, return on equity, etc.. These studies reported a varying degree of linkages between IC and performance. Moreover, there was mixed evidence about

the relationship between IC and the firms' overall performance was documented. The empirical evidence on contributions of three IC components *viz*. human capital (HC), structural capital (SC) and physical capital (CE) respectively in the total Value Added (VA) was, also, shallow. Hence, further research is needed to examine such relationships in order to gather concrete empirical evidence in support of the claim that IC is associated positively with business performance. Although a significant number of studies examined the effect of IC on firms' performance, most studies are, as yet, country specific. It would be interesting to compare different financial sectors across the globe and empirically examine their efficiency in utilizing IC to create value. In the absence of any empirical study on Islamic finance, examining the effects of IC on performance of such institutions may enhance further our knowledge in this potential and, as yet, unexplored area.

Other emerging factors related to the methodology, sources of data acquisition and control variables. Some researchers adopted surveys/questionnaires or case study techniques for data collection while others used a combination of questionnaires and supplemented it with financial data analysis. However, most of the studies relied exclusively on financial data and used VAIC as a measurement tool for independent variables with a varying degree of dependent and control variables. These studies adopted different regression models to examine the impact of IC on firms' business performance i.e. profitability (measured by ROA/ROE) and market valuation (measured by market-to-book value and Tobin's Q). In a nutshell, authors tended to hypothesise that IC was associated positively with business performance but the empirical evidence was insufficient to support this argument. Nevertheless, it is clear that VAIC is a popular method of IC measurement when using secondary/numerical (financial) data. The widespread use of the VAIC model across continents and various industrial sectors supports this argument.

3.7 Chapter Summary

This chapter documented an insight into the literature on the concept, creation, leverage, and commercialisation of IC. The chapter highlighted how IC was an important resource which ought to be managed in order to sustain or achieve competitive

advantage. The relationship between IC and knowledge management was highlighted, also. Hence, providing a foundation upon which this research would be built.

Additionally, the chapter provided a review of empirical studies on IC by dividing them into 1) IC disclosure studies and 2) IC performance studies. Most of the empirical literature, reviewed in this chapter, reflected the general state of IC disclosure and measurement which had been researched during the last two decades. The literature review, covered particularly in this chapter, related to IC performance studies; these allowed some conclusions to be drawn and the research problem and research gap in the existing literature to be identified.

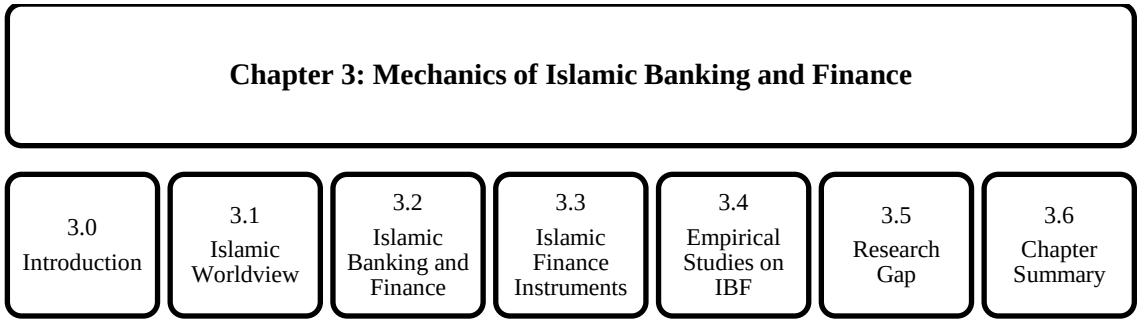
Empirical studies remained to focus mainly on high-tech industries i.e. IT, pharmaceutical etc. and paid only scant attention to the financial services sector. Furthermore, the studies, conducted in the context of conventional financial institutions, provided mixed evidence on how IC affected the performance of these institutions. Therefore, it is imperative to study the link between IC and business performance of the financial institutions. Equally, much of the extant research on IC focused on nations with a strong tradition of knowledge intensity i.e. European countries, Australia and the Americas. Most of the IFIs operate in the developing economies. Consequently, there exists no study as such that examines the effects of IC on IFIs' performance. This left a huge gap in the literature which this study aimed to fill.

In conclusion, given the divergent views in the literature, the issue of the effects of IC and CG-features on the economic performance of financial institutions, the magnitude of these effects, and how they might differ across time horizons i.e. pre and post the financial crisis boils down to an empirical question. This is one that the researcher confronts in this study. Against this background, the next Chapter establishes the missing connection between IC and the Islamic way of banking.

Chapter 4: Mechanics of Islamic Banking and Finance

3.0 Introduction

In order to comprehend the relationship between IC and Islamic finance, one must understand firstly the mechanics of Islamic finance. Hence, this chapter's primary objective is to define the phenomenon of Islamic banking and finance by tracing its roots in the Islamic religion. Secondly, the chapter explains the functioning of an Islamic bank by defining the basic principles of Islamic banking and finance, and exposes the difference between the Islamic and conventional banking systems. Finally, it describes the key modes of Islamic finance and emphasises the relationship between Islamic banking and IC



Section 3.1 highlights the Islamic worldview while section 3.2 defines the phenomenon of Islamic banking and finance. Section 3.3 describes the instruments of Islamic finance. Section 3.4 reviews the existing literature and section 3.5 identifies the research gap. The final section provides the summary of this chapter.

4.1 The Islamic Worldview

Abdullah and Nadvi (2011, p. 269-70) opined that "a worldview is generally understood as a set of beliefs about fundamental aspects of Reality that ground and influence all our perceiving, thinking, knowing, and doing". In contrast, the Islamic worldview is "basically a theistic and ethical worldview which contrasts sharply with the secularist or atheistic alternatives". There is no bifurcation or the world or duality in the Islamic worldview. The Islamic worldview is based on three pillars 1) Allah (the God –one and

only); 2) Qur'an –the world of Allah; and 3) Hadith –the sayings, approvals, and actions of the prophet Muhammad (PBUH) in his lifetime (Haniffa and Hudaib, 2002).

The individual and societal life of a Muslim is governed by certain sets of rules defined in Shariah[5]. Islam makes no distinction between religion and daily life. According to the Islamic belief, the Qur'an is a complete code for human life. The guidelines, provided in Shariah, are not subject to religious matters alone; it gives advice on all aspects of human life. Therefore, Islam may be perceived as comprising of three basic elements or sets of rules. The first set of rules –known as Aqida (faith) is subject to the core relationship between man and his Creator (Allah/God). It is concerned with all forms of faith and belief by a Muslim in Allah alone and His will. Like any ordinal structure, the stability and strength of Islam is founded on five pillars (*see* Ayub, 2009; Iqbal and Mirakhor, 2011) namely: Shahada[6] (the Profession of Faith), Salat[7] (Daily Prayer), Zakah[8] (Almsgiving), Sawm[9] (Fasting), and Hajj[10] (Pilgrimage).

The second set –Akhlaq (morals and ethics) is concern with behaviour, attitude, and work ethics according to which a Muslim lives in society. The third and final set of rules is concerned with transforming and manifesting the faith and beliefs into action and daily practices –formally known as Shariah.

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[5]Formally 'Shariah Islami'ah' but generally abbreviated to Shariah or Shaira. An Arabic word, it literally means "the way to the source of life". Shariah is referred to as a legal system in keeping with the code of behavior called for by the Qur'an and Sunnah (Lewis and Algaoud, 2001, p. 37).

[6]The profession of faith is the prerequisite for membership of the Muslim community. In order to embrace Islam, one must profess and act upon this belief in the Oneness of Allah known as Tawhid and the prophet-hood of the Prophet Muhammad (PBUH).

[7]Refers to the five-time daily prayers (at different intervals of the day) an adult Muslim is obliged to perform, preceded by ritual cleansing or purification of the body.

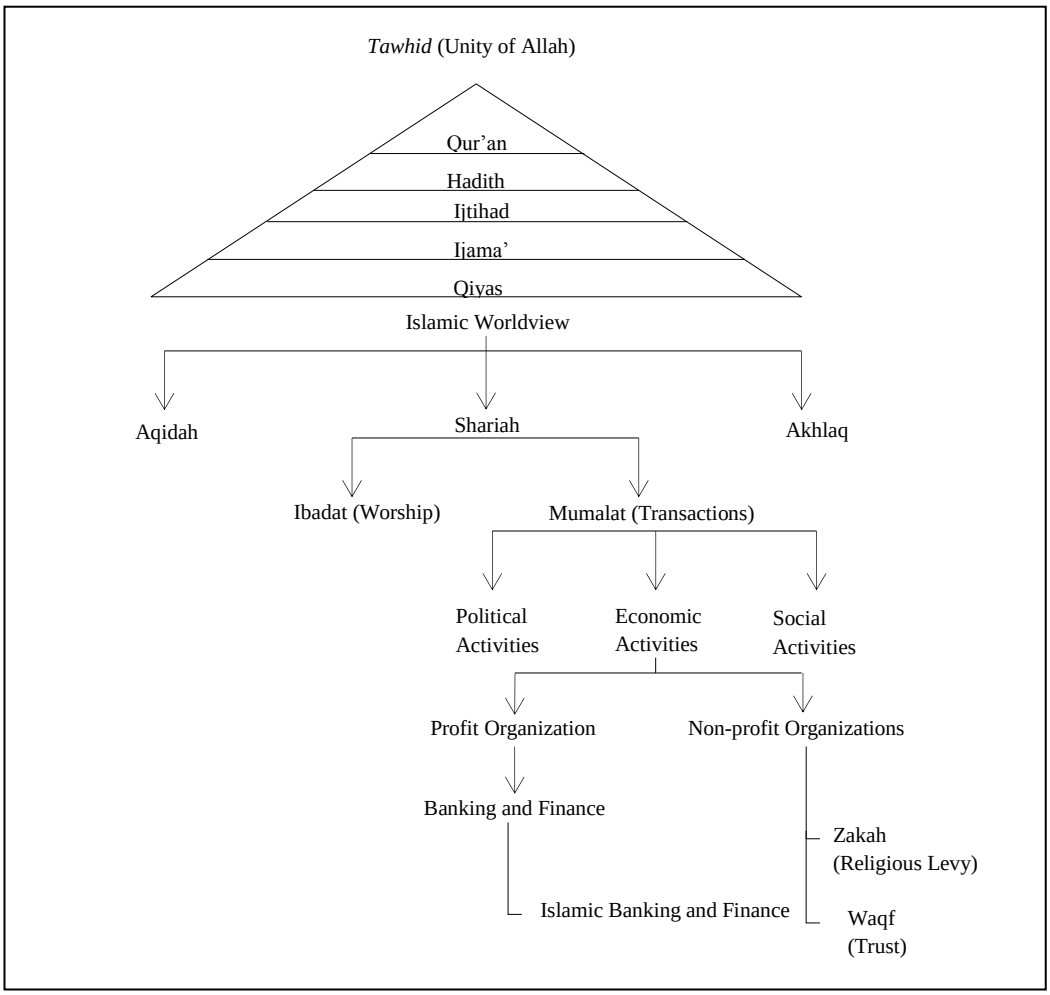
[8]A religious levy or obligation; it is an Arabic word which literally means to purify.

[9]The conduct of fasting during Ramadan (entire month) which is the 9th month of the 12-month Islamic lunar year.

[10]Hajj refers to the pilgrimage to the holy city of Mecca (situated in Saudi Arabia). Unlike aforementioned obligations (pillars), which every Muslim must perform, Islam obliges those who have the financial and physical ability to perform Hajj at least once in a lifetime. Hajj must take place during the 12th lunar month – Dzuhajjah, where certain set and detailed sequence of rituals must be practiced over the span of several days in and around the city of Mecca.

Figure 3.1

Islamic Worldview and Sources of Shariah



Source: Adopted from Haniffa and Hudaib (2002)

Shariah, being the practical aspect, provide guidelines on everyday life. Furthermore, it is divided into two components. The first is Ibadat (worship); this is subject to the practicalities of ways to perform rites and rituals. It recognizes the relationship between man-and-God –to be judged in the hereafter. The second is Muamalat (transactions or man-to-man activities). This includes rules to govern social, political, and economic activities. The conduct of economic activities within the economic system, which includes the rules for commercial, financial and banking system means that Islamic banking is a part of this system. Hence, banking and finance activities can be traced through the economic activities, back to daily life dealings, to Shariah and, finally, to Allah (through Shariah law). Thus, man is accountable not only to the society but, also, to Allah.

4.1.1 Shariah – the Intangible Ideology of Islamic Finance

The entire structure of Islamic banking and finance is built around the spirit and principles of Shariah; the practice of Islamic banking is covered in the empirical chapters. In Visser (2013), Shariah is an Arabic word which means literally "the way to a watering place" or "the path that leads to the spring (p. 10)". Figuratively, it means a clear path to be observed and followed by the whole Ummah[11] as manifested in the will of Allah[12] and as revealed to mankind through His Messenger, the Prophet Mohammad (PBUH). Shariah is simply a code of law or divine injunctions which regulate the conduct of human beings in their personal and collective lives (Ayub 2009).

Before tracing the origin of Shariah ideology, its relevance to the Islamic religion, its sources and its objectives, it is imperative to identify the sources of knowledge in Islam. In Ahmed (2011b), sources of knowledge in Islam were divided into revealed and derived. The former is classified further into the recited revelation (*Qur'an*) and the non-recited revelation (*Sunnah*). Both Qur'an and Sunnah constitute the primary sources of Islamic principles and rulings. In contrast, the latter is developed by human intellect through the process of exertion or independent reasoning. Together these sources are discussed under the intellectual sources of Shariah.

4.1.1.1 Sources of Shariah

Shariah is the Islamic law which springs from various sources. These sources can be subdivided into primary and secondary sources. Primary sources include Qur'an and Sunnah while Ijtihad (independent reasoning), Ijma (consensus), and Qiyas (analogical reasoning) are said to be the secondary sources.

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[11] The Arabic term referring to the nation of Islam whereby each member has to submit that sovereignty belongs to Allah alone. It also refers to "a vast homogeneous commonwealth of people who have a common goal and destiny and who are guided by a common ideology in all matters spiritual and temporal (kettell, 2011, p. 3)".

[12] This is nn Arabic word that stands for God. The most concise definition of Allah can be traced in the Qur'an (112:1-4) "*Say, He is Allah , [who is] One. Allah, the Eternal Refuge. He neither begets nor is born. Nor is there to Him any equivalent."* From an Islamic standpoint, everything (all the wealth) belongs to God and man is only a trustee. Further the Qur'an (20: 6) states, *"To Him (God) belongs that is in the heavens and all that is on the earth, and all that is between them, and all that is under the soil".* Shariah explicitly emphasize on the fact that Allah is the Law Giver and the Ummah enjoys a derivative rule-making power and not an absolute law-creating prerogative (Ayub, 2009).

Primary Sources of Shariah

The primary source of the divine law Shariah is the revelation of the holy Qur'an[13] and Sunnah[14] (Ayub, 2009). Qur'an is considered to be more accurate and authentic than Sunnah the second primary source of Shariah (Iqbal and Mirakhor, 2011). The major difference between Qur'an and Sunnah is that "Qur'an is the word of God and it was recorded in writing from beginning to the end during the lifetime of the Prophet, and he ascertained that Qur'an was preserved, as he received it, through divine revelation". Sunnah is retained mainly in the memory by his companions which leaves a doubt on their authenticity. The record of such sayings is called Hadith[15], an authentic tradition (Hassan and Lewis, 2007) or oral tradition of the Prophet Muhammad (PBUH) as narrated by his companions (Iqbal and Mirakhor, 2011). Furthermore, if any *Hadith* goes contrary to Qur'an, it is not considered to be as authentic while Visser (2013) posited that the Qur'an was decisive in respect of authenticity and, therefore, had to take priority over Sunnah. Although the Qur'an offers the primary rule of life, it does not address many matters where guidance for practical living is necessary. In such cases, the obvious solution was to follow the customs of the Prophet. At several such conflicting occasions, the Prophet himself gave judgments reflecting the application of rules, principles and injunctions already enunciated in the Holy Qur'an.

Secondary Sources of Shariah

There are three secondary sources of Shariah; these are, namely, Ijtihad (independent reasoning), Ijma (consensus), and Qiyas (analogical reasoning).

[13]One-tenth of the total 6200 versus in Qur'an are related to law and jurisprudence, about 500 verses are purely subject to the legal injunctions (Iqbal and Mirakhor, 2011, p. 16). Thus, Qur'an is considered to be the complete code of life by Muslims since it provides guidance for all aspects of life and is not limited only to religious aspects.

[14]Sunnah is a normative practice and an established course of conduct referring to the sayings of and actions done and/or approved by the Prophet (Ayub, 2009).

[15]A saying conveyed to humans through hearing of or witnessing an event. From an Islamic standpoint, Hadith refers to all that is narrated from the prophet, his sayings, his acts or doings and whatever he tacitly approved, plus all the reports that describe his physical attributes and character (see Ayub, 2009).

Ijtihad (Independent Reasoning)

Ijtihad[16] plays a critical role. It refers to the independent individual (Visser, 2013). It is an attempt, made by the Shariah intellectuals, to extract solutions to emerging issues and problems (Ayub, 2009) and is the vehicle through which rules of behaviour, not explicitly addressed to problems which arise as human societies evolve, are determined (Iqbal and Mirakhor, 2011). Therefore, Ijtihad is an exercise of one's reasoning to arrive at a logical conclusion on a legal issue undertaken by the Jurists in order to deduce a conclusion as to the effectiveness of a legal precept in Islam (Ayub, 2009). Likewise, Qiyas, the interpretation or individual logical reasoning, must not contradict with any of the above mentioned sources.

Religion is a very sensitive issue. Any amendment of addition resulting from an ill-advised interpretation of Qur'an or Sunnah could lead the followers to violate the teachings of Islam. Therefore, it is necessary for the jurist to be well qualified, experienced and possesses expertise required for a quality independent reasoning. These traits are stressed by the various authors to be the one at the core of human IC. For instance, Edvinsson and Malone (1997) and Sveiby (1997) established that human IC incorporated skills, knowledge and experience of individuals who are required to act in different situations in order to create tangible and/or intangible assets. Shariah interpretation requires, also, superior philosophical skills and, therefore, the jurist must be creative. This is yet another aspect of human IC, argued by Li et al. (2008), who were of the view that human capital was "thinking and doing" capital which captured the creativity of individuals, their knowledge, skills and professional experience.

Ijma (Consensus)

Ijma[17], which means consensus or in-agreement, is the first secondary source of Shariah. It occurred only after the demise of the Prophet Muhammad since he alone during his lifetime was the highest authority on Shariah (Iqbal and Mirakhor, 2011). In

[16]Ijtihad is an Arabic word which stands for an effort or exercise to arrive at one's own judgment. From an Islamic standpoint, it refers to the use of human reason in the elaboration and explanation of Shariah law. It includes, also, the interpretation of Quranic verses and Hadith (see Ayub, 2009).

[17]Ijma is the verbal noun of the Arabic word ajma'a which means to determine and to agree upon something. It refers, also, to a group having or holding the same opinion (see Iqbal and Mirakhor, 2011, p. 13).

referring to the Hadith[18], Visser (2013) opined that truth was safe with the community of believers. Hence, the community can be, also, a source of law but, unlike Quran and Sunnah, Ijma does not partake directly of divine revelation. Yet, there arises another problem since there exists no defined line about consensus. Some argued that Ijma referred to the unanimous consensus of Muslim Ummah as a whole on any issue (Kettell, 2011) while others restricted it to the agreement amongst Islamic scholars. In both cases, a high level of human intellectual capital is required because the decision makers must possess religious as well as contemporary knowledge of economics and finance in order to make timely compatible and incompliance laws. Since this study focused on IFIs which were regulated by the individual countries, therefore, Ijma referred to the consensus among the elected members of the parliament or the selected religious leaders of a country.

Qiyas (Analogical Reasoning)

The fourth root and second secondary source of Shariah is analogical reasoning. Qiyas[19] is, in effect, a ruling which is required on a certain situation not covered by Quran or Sunnah. Technically, "Qiyas is the extension of a position from the Shariah to a new case, on the grounds that the latter has the same effective cause as the former. The original case is regulated by a given text, and Qiyas seeks to extend the same textual ruling to the new case" (Ayub, 2009; Kettell, 2011). In other words, a comparison can be made with situations which Qur'an or Sunnah did provide. For instance, the use of wine is prohibited in the Qur'an. In this sense, all other toxicants with similar deleterious effects can be assumed to fall under the same prohibition (Visser, 2013). The use of analogical reasoning is widely accepted but the derived conclusions must not clash with the injunctions of the Qur'an or the Sunnah. Hence, Qiyas is a method of forming legal opinion or precedent for a situation or incident for which there is no direct ruling in the primary sources of law (Iqbal and Mirakhor, 2011).

[18]Muhammad (PBUH) said, "My community will never agree on an error".

[19]The literal meaning of Qiyas is "measuring or ascertaining the length, weight or quality of something. The term also refers to a comparison, suggesting similarity of equality between two things, one of which is taken as the criterion for evaluating the other (Iqbal and Mirakhor, 2011, p. 13-15)".

In synthesizing the above discussion, it is clear that the primary knowledge sources of Shariah are to be taken as granted and any amendments to those sources are considered to be violations of Islamic jurisprudence and not permitted under any circumstances. On the other hand, the secondary sources of Shariah are based mainly on the interpretations of the primary sources and the individual knowledge of Shariah scholars. These scholars are the ultimate human capital sources for the Islamic economic system. Since Islamic financial institutions are part of the Islamic economic system, any policy or law, introduced by the scholars, has a direct impact on the efficiency of IFIs. The impact is even direct and obvious since the IFIs are co-governed by the religious advisors. Hence, human IC (Shariah jurists, in the case of IFIs) plays a significant part in influencing the product and operations of IFIs and, in turn, their performance.

4.2 Principles of Islamic Banking and Finance

Islamic finance is an important part of Islamic economics. Any financial institution, based on the spirit and principles of Shariah, is known as an Islamic financial institution (IFI) and Islamic banking refers to a banking system which is based on Shariah. The most prominent features of Islamic finance are interest-free banking (collection or payment of interest is not permitted) and profit/loss (risk) sharing based financing. Additionally, it is co-governed by the Islamic-religious scholars who endorse or certify the permissibility of transactions (Halaal) such as ethical investments i.e. free from alcohol, armaments, tobacco or pornography (Ayub 2009, Warde 2010, Schoon 2010, Iqbal and Mirakhor 2011). Furthermore, Islamic finance prohibits Gharar (uncertainty) and Mysiry (Games of chance).

4.2.1 Interest-free Banking

Prohibition of riba (an Arabic term for usury or interest) is one of the most distinguishing principles of Islamic finance. All those financial institutions, based on the principles of Islamic law, are not allowed to deal in interest or riba. Riba refers to any predetermined payment over and above the actual capital (Visser, 2013). According to the Islamic doctrine, money itself has no intrinsic value (Thomas et al., 2005) and Islam forbids people from profiting by lending it, without accepting a level of risk. In other

words, to make money from money is not religiously permissible in Islam and wealth can be generated only through legitimate trade and investment. Shariah provides guidelines on how to earn wealth through permissible, legitimate sources of income in the light of the Islamic religion.

4.2.2 Risk Sharing

The principle of Profit/Loss Sharing (PLS) is at the core of Islamic finance. The idea is that, instead of lending capital on a prefixed rate of return, a venture is formed through partnership between the lender and the borrower on the basis of sharing any profit and loss. Unlike the conventional banking system whereby risk is transferred to the borrower, Islamic banks share the risk. Merchant banking and venture capital are among the fastest growing segments in contemporary finance and are considered to be conventional equivalents of PLS contracts. There are two broadly used modes of finance for such contracts: joint-venture (long-term equity-like arrangements); and entrepreneur borrower (finance trusteeship or commend a partnership or trustee partnership) (Hassan and Lewis, 2007; Usmani, 2008; Ayub, 2009; Iqbal and Mirakhor, 2011).

Entrepreneur borrowing is formed by the combination of financial and human capital. In this participatory mode of financing, one party (potential investor or business angel, sleeping partner or beneficial owner) entrusts capital to another party (entrepreneur or managing trustee) who has the skills, expertise and experience to utilize these funds efficiently in an agreed manner. The capital provider has the choice to restrict the entrepreneur in terms of business activity, clients, method, place and time period, or give full authority to the entrepreneur to act independently or unrestrictedly on the financer's behalf. Profit is shared then between the parties on an agreed upon ratio but cannot be fixed. In the case of loss, the financer bears all the capital losses while the entrepreneur bears the loss of services and does not receive any payment for her/his time and effort. Joint venture is similar to the above in its principles, except for the fact that the financier takes an equity stake in the venture. It is, in effect, a joint-venture contract whereby two or more parties jointly pool their capital to finance a project. All the parties, involved in the contract, have the right to participate in the management of the project or to act on one-another's behalf. Profit is shared on a pre-

agreed ratio or on the basis of capital introduced by each partner but cannot be a lump sum or fixed. Losses are shared in proportion to the capital contributed by each partner.

Both methods can be combined in one project. For instance, the initial capital can be generated through joint-venture, while working capital may be provided by a potential investor or business angel later on. Such financing can be observed in infrastructural concerns such as building, plant and road construction, real estate, ports and housing development with skilful investors ranging from engineers, physicians, IT specialists to craftsmen and traders for micro-financing of Small and Medium Enterprises (SMEs). All such contracts are based merely on mutual trust amongst the partners.

4.2.3 Halaal (Religiously Permissible) Financing

Contrary to the secular orientation of conventional banking system, the Islamic economic agents are ethically bound not to cross those boundaries defined by Shariah. Consequently, Islamic banks do not finance all business activities which conflict with the Islamic moral value system (Lewis and Algaoud, 2001). For instance, Islamic banking does not support businesses dealing with alcohol, gambling, armaments, pornography, pork etc.

4.2.4 Gharar (Uncertainty)

Gharar is prohibited in Islamic finance in order to protect the weak from exploitation and to achieve better levels of transparency and fairness (Visser, 2013). The word, gharar, can be translated as deception or delusion or connotates peril, risk or hazard (Abedifar et al., 2013). However, the most commonly used financial interpretation of gharar is hazard, speculation or uncertainty caused by the lack of clarity regarding the subject matter or the price in a contract or exchange. A simple example of gharar is when the liability of any of the parties, involved in the contract, is contingent or uncertain, and selling something that is not present at hand or the consequence of which is unknown. For example, the sale of a bird in the air or fish in the water (Lewis and Algaoud, 2001; Ayub, 2009).

4.2.5 Maysir (Games of Chance)

The word Maysir and Qimar are used interchangeably in Arabic literature. Both refer to easy money or acquisition of wealth by chance. Simply, it refers to gambling and all forms of gambling are forbidden in Islamic jurisprudence (Lewis and Algaoud, 2001; Ayub, 2009; Warde, 2010). Islamic scholars agree upon the fact that maysir and gharar make a contract null and void.

4.2.6 Shariah Governance

The underlying principle of Islamic banking and finance is Shariah-compatibility in all of its products and services. In order to comply with this rule, Islamic finance organisations are co-governed by Shariah scholars who specialize in Islamic law and jurisprudence with some having, also, a background in economics and finance (Ahmed, 2011a). This condition applies to all those institutions involved either directly i.e. fully-fledged Islamic banks, or indirectly such as conventional banks with Shariah-windows, investment companies and funds in Islamic finance.

The Shariah governance framework is an important feature of Islamic banking and it determines the practices and the types of products offered. Generally, any financial institution offering Shariah-compliant products and services is obligated to have its own permanent independent Shariah Supervisory Board (SSB) or committee. However different Shariah organs, ranging from an in-house Shariah-compliance unit, internal Shariah audit and review to SSB, can be found across the whole Islamic finance industry. At the core of such Shariah organs is the agenda to implement a Shariah governance framework and to lay guidelines which are necessary to reduce Shariah-compliance risks and to ensure that the IFIs fulfil their fiduciary duties of conducting business according to Shariah principles[20]. However, it should be noted that the SSB has

[20]Islamic Financial Services Board (IFSB, 2009, p. 2-3) recommended "four aspects that a SSB or Shariah governance system should entail at the level of IFIs (1) Issuance of relevant Shariah pronouncements/resolutions, (2) Dissemination of information on such Shariah pronouncements/ resolutions to the operative personnel of the IFIs who monitor the day-to-day compliance with the Shariah pronouncements/resolutions vis-à-vis every level of operations and each transaction, (3) An internal Shariah compliance review/audit for verifying that Shariah compliance has been satisfied, during which any incident of non-compliance will be recorded and reported, and as far as possible, addressed and rectified, and (4) An annual Shariah compliance review/audit for verifying that the internal Shariah

no executive function or strategic role; these are the responsibilities of the Islamic banks' boards of directors (see Ahmed et al., 2014).

Ahmed (2011b) classified Shariah governance regimes into National Shariah Authority (NSA) and Organizational Shariah Authority (OSA). The former exists in the form of law/regulations supported by a complementary national Shariah supervision mechanism at the regulatory level. The NSA's primary objective is to accomplish the broader Shariah requirements of the Islamic finance industry and to protect the interests of shareholders not served at the organizational level. Furthermore, an active NSA is expected to address the Shariah-related issues; harmonise the Shariah interpretations; and ensure compliance with Shariah principles. In contrast, the OSA's core role is to provide an in-house mechanism of Shariah governance structures and processes which help to strengthen the organisation. The operational issues under OSA purview can include the Shariah-approval of newly designed products; monitoring of the day-to-day compliance with the Shariah pronouncements; internal Shariah-audit; and annual Shariah review. Furthermore, Ahmed (2011b) identified "four different types of regulatory regimes of Shariah regulatory framework (p. 65–67).

i. *Legally constructed:* This system is similar to the conventional financial system whereby the banking law broadly determines the banks' operations. Under this structure, the Shariah framework is determined by law with no supporting Shariah bodies at the national and organizational levels[21].

ii. *Robust Shariah governance*: This regime has an active Shariah governance system both at national and organisational levels. The NSA plays, also, an active role in Shariah issues in the industry and regulators provide detailed guidelines to strengthen the Shariah supervision at the organisational level[22].

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compliance review/audit has been appropriately carried out and its findings have been duly noted by the Shariah board".

[21]A prominent example is Iran where all products, offered by the IFIs, are identified by the Usury-free Banking Act of 1983. There exists neither a NSA nor an OSA; however, the Central Bank of Iran (CBI) is responsible for implementing the law.

[22]Indonesia, Malaysia, and Pakistan are the operational examples of robust Shariah governance. Bank Negara Malaysia, the central bank of Malaysia, established a national Shariah Advisory Council in 1997 as the highest authority for Sharaih-related business. Likewise, the State Bank of Pakistan established a

iii. *Passive Shariah governance*: The third category of countries has passive framework of Shariah governance at the national level and active Shariah governance at the organisational level. Countries, in this category, may have a NSA; however, its role is limited and does not include approval of new products[23].

iv. *Market driven*: Under the market-driven regime, Shariah compliance is left to the IFIs and there is no central NSA to oversee the products being marketed. Furthermore, there is no regulatory oversight or guidelines for the SSB at the organisational level. The system is market driven whereby new Islamic Shariah-compliant products are cleared by the SSBs at the organisational level[24]".

Most fully-fledged Islamic banks have their own independent SSBs whereas Islamic Shariah-windows (extended hands of conventional banks), particularly those operating in Muslim minority societies e.g. France, Germany, do not have a permanent SSB (Nawaz, 2013b). Instead, when required, these banks hire independent Shariah consultants.

Although the Islamic banking and finance industry is currently experiencing an unprecedented rate of growth, one of the challenges, facing this industry, is the shortage of Shariah scholars who are well versed in Shariah matters and in modern banking (Iqbal and Mirakhor, 2011). Consequently, it is not surprising to find the same person sitting on different Shariah boards (Nawaz, 2013b).

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central Shariah Board to guide the IFIs in matters related to Islamic finance. Other than Shariah scholars, the central Shariah board has members from various fields such as banking, accounting and law.

[23]Kuwait and United Arab Emirates (UAE) are countries falling under passive Shariah governance regimes. The Central Bank of Kuwait Law of 1968 stipulates that IFIs should have an SSB of at least three members appointed by the General Assembly. Likewise, the UAE Federal Law No. 6 of 1985 calls for the creation of Higher Shariah Authority comprising people with backgrounds in Shariah, legal and banking backgrounds to ensure the legitimacy of the transactions according to the provisions of Shariah. Furthermore, the law requires the creation of SSB with at least three members in IFIs to ensure that the transactions are in accordance with the principle of Islamic law.

[24]Bangladesh, Saudi Arabia and United Kingdom are all countries which follow a market-driven approach.

4.3 Islamic Finance Instruments

The increased complexity and volatility of the financial markets since the early 1980s have led financial institutions to be innovative and to offer products to mitigate, transfer and share financial risks. Iqbal and Mirakhor (2011) suggested that "the economic activities in any economic system can be regarded as contracts between the economic agents, thus, a financial instrument is also a contract, whose terms and conditions defines the risk and return profile of the instrument (p. 72)". There is no established classification of contracts in the Islamic legal system as such. Nonetheless, Iqbal and Mirakhor (2011) suggested a classification of the contracts dealing with business and commercial transactions. Islamic financial instruments can be classified into four broad categories, all of which are discussed in the following section.

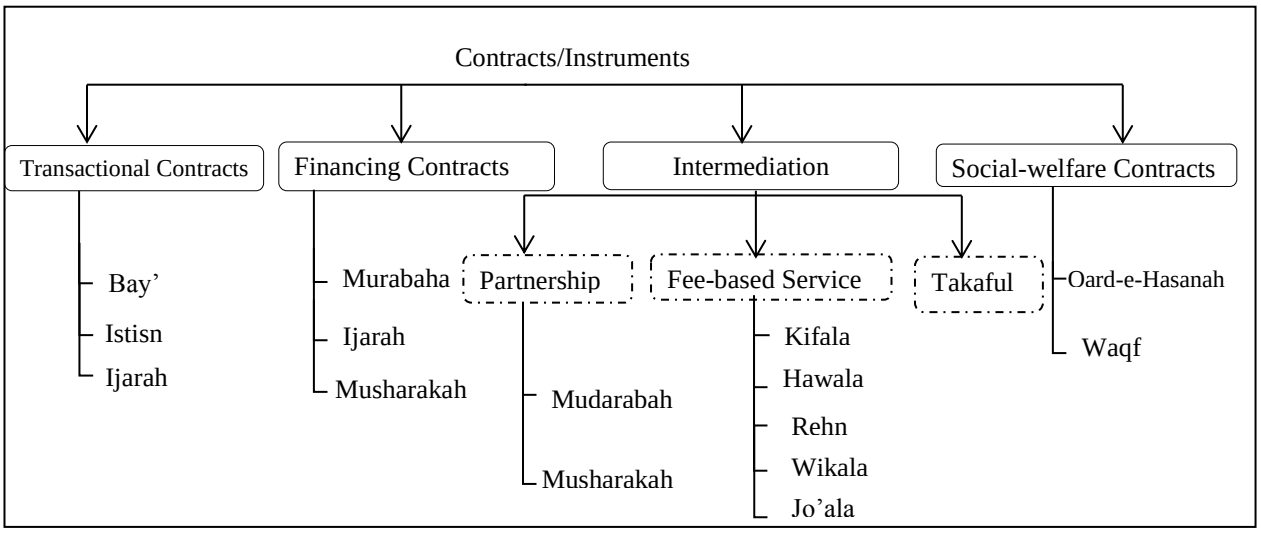
4.3.1 Transactional Contracts

Islam gives preference to trading over other forms of business and lays great emphasis on promoting trade[25]. Trade is not limited to trading of physical or tangible assets and can be, also, trading of intangible assets such as rights to use a tangible asset. According to Iqbal and Mirakhor (2011), such contracts are engineered to deal with the "real sector economic transactions that facilitate the sale, trade and exchange of goods and services. However, the core transactional contracts are based on trade or exchange-based activities. The very core of an extended economic and financial system is formed through transactional contracts as these contracts create assets, which further become the basis of financing and investment opportunities (p. 81)". There are two forward sales contracts, namely, Salam and Istisna whereby sale of the commodity is transacted before the commodity comes into existence. Ijarah is one of the most commonly used modes for sales and exchange transactions in IFIs.

[25]El-Din (2013) addressed the contemporary challenge of having to distinguish between legitimate and illegitimate trade in Islam and provided a comparative analysis by putting the argument forward that "legitimate trade in goods and services precludes usury transactions that involve lending/borrowing through the interest rate. The former is utility-promoting and optimality-generating but the latter is counterproductive, p. 108)".

Figure 3.2

Islamic Financial Instruments



Sources: Adopted from Iqbal and Mirakhor (2011)

4.3.1.1 Bay' al Salam (Purchase with deferred delivery)

In terms of function, Bay' Salam is similar to conventional forward contracts. However, the difference lies in the terms of payment arrangements. It is an ancient form of forward contracts wherein the buyer pays in advance to the seller the full-negotiated price for a specific product to be delivered at a specified future date (Ayub, 2009). Therefore, Salam is in effect where the parties stipulate a certain time for supply of specific goods of specified quantity and quality. The difference between conventional forward contract and Salam lies in the fact that the full negotiated price is payable on the spot, as opposed to the former where the full payment is not due in advance (Iqbal and Mirakhor, 2011). Although Salam exists in the theory of Islamic banking and finance, the IFIs do not regard it as a popular mode of financing by due its high-risk profile. Advance on spot payment in full is one of its flip sides which may expose the parties to a number of risks.

4.3.1.2 Istisna (Partnership in manufacturing)

Istisna is an agreement culminating in a sale at an agreed-upon price whereby the buyer places an order to manufacture, construct or assemble anything to be delivered at a

future date (Ayub, 2009). Istisna comes into existence once the developer or manufacturer undertakes to construct or manufacture the property or asset for the buyer (Iqbal and Mirakhor, 2011). An important feature of Istisna is related to the mode and timing of the payment. Istisna is more flexible in terms of payment. Unlike Salam, advanced payment is not a condition. Even so, it is unnecessary that it be paid in full at the time of the delivery. Payment can be made through instalments subject to the mutual agreement between the parties. As opposed to the Salam contract, Istisna can be cancelled unilaterally before the asset or commodity is built or manufactured.

4.3.1.3 Ijarah (Lease)

Generally, Ijarah[26] refers to the lease of tangible assets like property and merchandise. Technically, "Ijarah is a sale contract but it is not the sale of a tangible asset rather it is a sale of usufruct (the right to use the object) for a specified period of time" (Iqbal and Mirakhor, 2011, p. 84). In Islamic jurisprudence, "an Ijarah is a contract of a known and proposed usufruct of specified assets for a specified agreed-upon time period against a specified and lawful return or consideration for the service or return for the benefit proposed to be taken, or for the effort or work proposed to be expended. In other words, it is the transfer of usufruct for a consideration, which is rent in the case of hiring assets or things, and wages in the case of hiring people" (Ayub, 2009, p. 279).

All the terms of an Ijarah contract should be stipulated in detail: these include a clear description of the leased-asset; the purpose for which the asset may be used; rental amount and schedule of the payment (Iqbal and Mirakhor, 2011). The lessor or owner of the asset bears all the liabilities emerging from the ownership whereas the lessee bears those liabilities relating to the use of the asset. A lively example is of a leased house in which case all the taxes relating to the property shall be borne by the lessor, while utility bills, such as water, electricity and gas shall be the responsibility of the lessee. Consequently, the lessee has no liability unless when it is established that the damaged caused to the property resulted from her/his wilful transgress or negligence. In such a case, the lessee is liable to compensate the lessor either by paying for the damage or by replacing the leased asset.

[26]"Ijarah, conveys the sense of both hire and lease" (Ayub, 2009, p. 249).

Ijarah has huge and, as yet unrealized, potential for developing advanced financial instruments to cater for the needs of the entrepreneurs, retail and corporate investors and the public sector[27]. Iqbal and Mirakhor (2011,p. 85-86) opined that Ijarah was "conducive to the formation of fixed assets and medium- and long-term investments in the economy".

4.3.2 Financing Contracts

Financing contracts are the bridging contracts which are used to generate and extend credit by offering channels for capital formation and resource mobilization between investors and entrepreneurs. An absence of debt contract is one of the distinguishing features of such financing contracts. They are meant either for financing aforementioned transactional contracts in the form of trade finance or asset-backed securities or for providing capital through equity partnership which can take several forms such as partnership, diminishing partnership, or co-ownership. Viewing such contracts from the perspective of their relative risk, the system offers low-risk asset-backed securities at one end of the risk continuum whereas, at the other extreme, it promotes risky equity financing such as venture capital and private equity. Since the earlier section discussed Ijarah and Istisna asset-backed financing contracts discussed, the following section discusses only Murabaha and Musharakah.

4.3.2.1 Murabaha (Cost-plus Sales)

Murabaha is one of the most popular sales contracts used by the IFIs for purchasing commodities and other products on credit. It refers to a mutually stipulated margin of profit in a sale transaction whereby the cost of the commodity is known or made known to the buyer. Originally, Murabaha referred to a sale transaction whereby a trader would purchase a product required by an end-user and, then, sell the same product to the end-

[27]Ijarah is used directly in the retail sector for housing, automobiles, plant and machinery, and consumer durables etc. and indirectly for Sukuk issues by the corporate and public sectors. Furthermore Ayub (2009) stated that although "leasing constitutes a large portion of the portfolios of IFIs, yet, the share could be higher. One of the basic reasons why IFIs hesitate to increase their lease portfolio is that by becoming the owner of the asset, IFIs take on additional obligation to administer the lease, which is not their core business (p. 297-298)".

user at an agreed price calculated by using an agreed profit margin over the costs incurred by the trader. Nowadays, financial intermediaries, such as banks, perform the role of a trader.

A typical Murabaha transaction involves three parties, namely, the financier (usually an IFI), the vendor or original seller and the end-user of the financed product. The whole concept is that a financier, i.e. an IFI, purchases a product (raw material or commodity) for the purpose of supplying the same to an entrepreneur who does not have his own capital to do so. The financier and the entrepreneur mutually agree upon a profit, often referred to as "mark-up"; this is added to the principal cost of the product. Hence, the parties negotiate the profit margin on cost and not the cost *per se* (Ayub, 2009; Iqbal and Mirakhor, 2011). A typical Murabaha transaction follows four steps (Ayub 2009, Iqbal and Mirakhor 2011).

(i) *Price Quotation*: The client, seeking finance, describes to the vendor the goods she/he intended to obtain and asks the vendor to quote the price.

(ii) *Promise to buy at Cost-Plus-Profit*: After getting the price quotation from the vendor, the client contacts the financer (bank) to finance (purchase) the identified product on her/his behalf from the vendor. The client promises to buy the same goods from the financer at a price inclusive of the original cost in the quotation plus a profit to be agreed upon mutually. Hence, such a contract is mediated by a high degree of trust between parties.

(iii) *Acquiring the Identified Product*: The bank acquires the identified goods from the vendor by making payment. Ayub (2009, p. 87-88) noted that "IFIs usually appoint the client as their agent to accept the delivery from the vendor on their behalf, to avoid storage cost and other costs related to the delivery arrangements. Additionally, the bank also accepts the goods or other assets as collateral against the credit risk or the risk of default in payment by the client". Finally, the mode of payment i.e. lump sum or through instalments is agreed.

(iv) *Payment by the Client*: At the fourth and final stage of the contract, the client makes payment to the financer (IFI); this includes the principle cost to acquire the product plus a profit margin for the financer.

Murabaha is different from a conventional loan. No money is loaned in Murabaha but

instead financing is linked to an asset by acquiring a specific asset for the client. Secondly, conventional banks are exposed only to credit risk whereas IFIs are exposed to several risks including price risk. Another difference is that IFIs hold the ownership of the asset for some time before transferring the same to the client. Therefore, the IFI bears the risk of any damages caused to the asset.

4.3.2.2 Musharakah (Partnership)

Risk sharing through a participatory mode of financing is one of the most prominent features of Islamic finance. Modes, which form the basis of Islamic finance, belong to Profit and Loss Sharing (PLS) techniques and, as such, are considered by the majority of Islamic jurists to be the most desirable modes. The most commonly used PLS modes of finance are Musharakah and Mudarabah.

Musharakah is a versatile contract with different variations to suit different situations. It is a participatory contract whereby two or more parties combine their capital, labour or skills to form a joint venture on the basis of sharing in profit and loss and, hence, sharing in risk. All the parties reserve an exclusive right to participate in the management. However, they are free to entrust their rights to another partner involved since each party acts as an agent of and for the other[28]. Profit is shared on a pre-determined ratio. However, the percentage of profit for each partner should be agreed before entering into a Musharakah but it should not be fixed or guaranteed. There is a consensus amongst the Shariah scholars that the loss shall be borne by the partners according to their contributed capitals. If any of the partners offered services not capital, then he is not liable to share in loss.

4.3.3 Intermediation Contracts

The core purpose to designing such contracts is to facilitate an efficient and transparent execution of transactional and financial contracts. In addition to the fee-based services

[28]Musharakah is a participatory contract whereby once party offers capital while the other provides technical assistance. Execution of such a joint project is subject to highly qualified professionals (human IC) and sophisticated organizational systems (structural IC) who execute such joint ventures. IFIs possess such high quality stocks of IC and, hence, are entrusted by the capital providers to act of their behalf.

for economic activities, economic agents are provided, also, with a set of tools to perform financial intermediation under such arrangements. As mentioned earlier, participatory contracts are the act of combining investment and management. Mudarabah, which is the "cornerstone of Islamic financial intermediation, is a special case of partnership of capital and labour as such and discussed in the following section (Ayub, 2007, p. 320-331; Iqbal and Mirakhor, 2007, p. 103-105)". In terms of management and control, Mudarabah is classified further into two:

Classified or Restrictive Mudarabah: Under such arrangements, the principal has the choice to restrict the entrepreneur in terms of business activity, clients, method, geographical location and/or time period.

Un-classified or Un-restrictive Mudarabah: It is when the principal gives the agent or entrepreneur full authority to act independently or unrestrictedly on the financer's behalf.

Credit risk and default often become an issue in the case of Mudarabah. Credit decisions are made on the bases of the firm's financial position, trade history, its future performance and cash flows. In Ayub (2009), since there might not be any tangible asset which could be used as collateral against potential losses, the traditional physical collateral model, which was applied in mature enterprises, could not be used in the case of such potential entrepreneurs. In order to mitigate such risk, "the capital-owner should perform due diligence in respect of the past performance and reputation of the entrepreneur. On the other hand, the entrepreneur should also perform adequate screening and monitoring of potential projects worthy of good investment opportunities (p. 324)".

4.3.4 Fee-based Services

Kifala is a contract of guarantee; it an obligation in addition to an existing obligation in respect of demand for something. It may relate to a financial obligation or an individual act to be performed. The former refers to an obligation to be met in the event that the debtor fails to honour her/his financial obligation to the principal. The later implies a timely execution of an act e.g. delivery of certain goods or performing a specific task.

Hawala refers to transferring an obligation of debt from one debtor to another. Under the arrangement, the debt is transferred to the assignee and the creditor cannot ask for repayment of the dues from the debtor (Ahmed, 2011b). The basic difference between Kifala and Hawala is that, in the case of the former, the principal debtor is not released as opposed to the latter case.

Pledging is used commonly by the financial institutions to "reduce credit risk of non-payment by the borrower by securing a financial obligation either through pledge or through personal surety (Iqbal and Mirakhor, 2011, p. 104). More formally, the bank takes an asset as collateral against a financial liability of the borrower. In case, the borrower fails to pay back the borrowed amount, the bank may recover the liability by selling the pledged asset.

It is an agency agreement where a designated individual or legal entity represents a party (client). It is a common practice to hire agents to facilitate trade operations. On the surface, a Wikala may look like that of Mudarabah, since both are principal-agent contracts. Yet, the main difference is that in the case of Mudarabah (precisely, unclassified Mudarabah), the agent has the freedom to utilize funds according to their professional knowledge, as opposed to the case of Wikala whereby the agent executes particular tasks according to the instructions given by the client (*see* Ayub 2009, Iqbal and Mirakhor 2011).

Several services are offered under Jo'ala against a pre-determined fee or commission. The scope of Jo'ala is wide enough to open up several fee-earning opportunities and can be utilized to offer advisory, consultancy (including Shariah consultancy), asset management, fund placement and trust services often offered by investment banks in the conventional financial system.

Takaful is an Arabic word which means mutual or joint guarantee (Kettell 2011). It is the closest Islamic instrument to the conventional insurance system. The prime objective of Takaful is to pay a defined loss from a defined fund. Typically, Takaful is carried out in the form of solidarity Mudarabah, where all the partners mutually agree to share their losses by contributing periodic premiums in the form of investments. They are then entitled to redeem the residual value of profits after fulfilling the claims and premiums (Iqbal and Mirakhor 2011).

Takaful and conventional insurance share the common goals of providing a reasonable financial security against unpredicted catastrophe, disaster or risk befalling one's life of property (Kettell 2011). Although both sets of insurance strive for a common ideal based on contractual principles yet, there exist some differences between both systems. First, the contemporary insurance system contains elements such as riba (interest), gharar (uncertainty) and mysir (games of chance or gambling), which are contradictory to Shariah law. *Tabarru* (contribution or donation) is the main core of Takaful, which makes it free from such elements. Iqbal and Mirakhor (2011) point to another critical difference –the right to receive surplus profit that give participants the right to share the surplus profits generated, but at the same time they are liable, in addition to the premiums, for amounts they have already distributed, if the initial premiums paid during a period are not sufficient to meet all the losses and risk incurred during that period (p. 122)".

4.3.5 Social welfare Contracts

Although facilitation of social welfare contracts is beyond the scope of intermediation, an intermediary can, however, certainly offer community services by institutionalizing social welfare contracts. Such contracts are made between the society and individuals to promote the well-being and welfare of the less privileged. Since Islamic banking is grounded on Shariah law which promotes welfare of mankind and prevents harm, IFIs, therefore, promote social welfare contracts. The main sources for fund generation in such contracts are zakah (religious levy) and penalties imposed on late payments (Iqbal and Mirakhor, 2011).

4.3.5.1 Qard-al-Hassan (Benevolence Loan)

Qard-al-Hassan is a gratuitous loan which bears zero interest. Historically, such loans are provided for charitable purposes whereby the recipient does not have to pay a return on principal amount but he/she is morally bound to repay the loaned amount in full. Moreover, the provider of capital is not compensated for inflation. A lively example is of current accounts held in an Islamic bank. The depositors lend their money to the bank free of interest. Although these funds are demand deposits, whilst the bank holds them,

they can be invested freely to fund any of the bank's day-to-day operations (Iqbal and Mirakhor, 2011).

4.3.5.2 Waqf (Trust)

In Dusuki (2008, p. 57), "Waqf is a form of perpetual charity that entails the use of assets such as cash, land, real estates for charitable purposes. One of the unique characteristics of waqf instruments is its perpetuity that does not allow waqf asset to be disposed of and its ownership cannot be transferred. Thus, waqf creates and preserves long-term assets that generate income flows or indirectly help the process of production and creation of wealth".

4.3.6 Statement of Financial Position of an Islamic Financial Institution (IFI)

Since the mechanics of Islamic financial engineering were established by individually describing the modes/instruments of Islamic finance, it is imperative to highlight them on the statement of financial position of a typical Islamic financial institution (IFI). The following may not be representative of each and every Islamic bank in existence but it offers a general structure of intermediation using Islamic contracts.

Table 3.1

Typical Statement of Financial Position of an Islamic Bank

Assets	**Liabilities**
Trade Financing Salam Murabaha	Demand Deposits Current Account Savings Account
Ijarah / Istisna	Investment Accounts
Mudarabah (Profit/Loss Sharing Investments)	Special Investment Accounts
Musharakah (Equity Partnership)	Capital, Equity, and Reserves
Services (Jo'ala, Wikala, Kifala)	

Source: Iqbal and Mirakhor (2007, p. 116)

4.3.6.1 Liabilities Side –Sources of Funds for an Islamic Bank

On the liabilities side of an Islamic bank, the depositors are offered current, savings, investment and special investment accounts. In addition to deposits, an Islamic bank offers, also, to its individual and corporate clients, for a fee, basic banking services such as funds transfer, foreign exchange transactions, letters of credit, investment management, Shariah advisory and other related services.

Current Account

Current accounts are demand accounts and are kept with the bank on custodial arrangements and are repayable in full on demand. Demand deposits are regarded as loans to the bank and whose payment is guaranteed. They are based on the principle of al-Wadia (trust or safekeeping) and are not remunerated. An agency contract is formed for the purpose of protecting and safekeeping the depositor's assets. The bank may use such funds to invest in religiously permissible activities at their own risk. Usually, Islamic banks use these funds to meet their liquidity needs and to manage their cash flow (*see* Iqbal and Mirakhor, 2011).

Savings Account

Such accounts involve usually higher balances and a longer time commitment. Similar to the current accounts, savings accounts are based on the principle of al-Wadia) or Mudarabah. A few banks promise a fixed interest. For instance, the Islamic Bank of Britain (IBB) have held a fixed return at 3 per cent since 2004; this is calculated and paid to the depositors on monthly basis (Islamic Bank of Britain, 2013). Most offer some kind of remuneration, in the form of hiba (gift), usually at the discretion of the institution and depending on its profitability (Iqbal and Mirakhor, 2011).

Investment Account

Iqbal and Mirakhor (2011, p. 105) explained that "the major portion of the bank's financial liabilities would consist of investment accounts that are, strictly speaking, not

liabilities but a form of equity investment, generally based on the principle of Mudarabah. Investment accounts are offered in different forms, often linked to a pre-agreed period of maturity, which may be from one month upwards and could be withdrawn if advance notice is given to the bank. The profits and returns are distributed between the depositors and the bank, according to a pre-determined ratio". A distribution of 80% to the investors (depositors) and 20% to the bank is typical; however, this ratio may vary considerably from bank to bank. The investment account holders bear risks very similar to those of the shareholders; however, they do not have any right to monitor and control the management or voting right.

Special Investment Account

A bank may offer a Special Investment Account (SIA) customized for high-net-worth individuals or corporate clients. Such accounts operate under the Mudarabah principal but the profit distribution ratio and the modes of investment of the funds are "customized to suit the individual client's needs. Generally, special investment opportunities – identified by the bank, remain the subject matter of a SIA. These opportunities have a specific size and maturity and result from the banks participation in a pool of investment, private equity, joint venture or a fund in the form of Musharakah (Ayub, 2009, p. 327)".

The maturity and profit ratios are negotiated separately for each special investment account, with the yield directly subject to the success of the particular investment project. SIAs carry a significant potential for designing and developing funds with precise risk-return profiles to offer high-net-worth individuals and institutional clients opportunities to manage portfolios and to perform efficient risk management.

4.3.6.2 Assets Side

Banks need to manage diversified portfolios and select proper instruments/modes of financing in order to manage risk efficiently. The volume of investment deposits determines the investment strategies of a bank. If depositors are risk-averse, banks

should be risk averse, also, i.e. investing in less risky modes. The assets side of an IFI can carry a more diversified portfolio of heterogeneous asset classes, representing a wider spectrum of risk and maturity profile. For short-term maturity, limited-risk investments, there is a choice of asset-backed securities that resemble debt securities in terms of the payoffs. Such securities originate from trade-related activities, such as Murabaha and Bay' Salam, and are arranged by the bank which uses its skill, market knowledge and its customer base to finance the trading activity.

Ijarah and Istisna are popular for the medium-term maturity investments. Both modes are asset-backed and are suited best for financing automobiles and machinery. On the other hand, Salam has a vast potential in financing the productive activities in crucial sectors and, particularly, the rural economy which includes agro-based industries and agriculture generally.

On the other hand, profit/loss sharing contracts – Mudarabah and Musharakah can be used for short, medium and-long-term project financing, import financing, pre-shipment export financing, and working capital financing and financing all single transactions. For instance, IFIs use Diminishing Musharakah for the purchase of fixed assets such as real estate assets (houses), transport, machinery, etc. Similarly, Murabaha is used for the purchase and sale of trade financing automobiles, acquisition and holding of stock and inventory, raw material, spares and replacements and semi-finished goods. Huge single transactions are financed through Musawamah whereby the bank can engage into private equity or venture capital activities via Musharakah for longer-term maturity investments.

4.4 Empirical Studies

The basic assumption, underlying the conventional banking theories, is that banks accept deposits at a lower interest rate and resell those deposited funds to those seeking finance for economic activities at a higher interest rate. Consequently, the banks earn profits based on their competitive advantage at gathering information and underwriting risk (Santos, 2001). Hence, profit in conventional banking system is driven mainly by the spread between the interest rates i.e. the interest rate received from the capital borrowers and the interest rate paid to depositors. Here, the contention is that IFIs

perform the same intermediary function with the exception of a predetermined interest rate. In other words, IFIs do not receive or pay a predetermined or prefix interest rate but, instead, profit is earned through investments in different projects and shared on the basis of agreements with depositors and with borrowers.

Given the robust growth of Islamic finance industry, many leading conventional banking groups i.e. Citibank, HSBC, Standard Chartered bank etc. have made their way to the Islamic way of banking. As a consequence, the numbers of financial institutions which offer Shariah-compliant products, have increased causing competition within the Islamic finance industry. Correspondingly, many empirical studies examined the efficiency of conventional and Islamic banks and documented that IFIs were more efficient than their conventional counterparts. Nonetheless, the evidence in this regard remains inconclusive.

Most of the available studies used the traditional financial ratios such as ROA and ROE to assess the performance of financial institutions in the context of conventional banking[29]. Others compared the performance efficiency of banks being either conventional or Islamic. These studies used the same financial ratios to compare the performance between two sets of banking. In contrast, another steam of research remained exclusively focused on Islamic financial institutions. Table 3.2 provides chronologically a summary of these studies, including, author, year, aim of the study and main findings.

Samad and Hassan (1999) were among the pioneer studies which evaluated the inter-temporal and interbank performance of a leading Malaysia Islamic bank –Bank Islam Malaysia Berhad (BIMB). The study used the financial ratios, such as ROA and ROE, to measure the financial performance of BIMB while liquidity performance was measured using loan-deposit ratio, cash-deposit ratio and current ratio. All those ratios were compared against eight conventional banks operating in Malaysia for the period from 1984 to 1989. The comparative analysis showed no significant differences in the financial performance based ROA and ROE.

[29]Appendix 2.1 provides a summary of those studies remained exclusively focused on conventional financial institutions.

Table 3.2

Chronical summary of selected empirical literature on Islamic banking and finance

Study	Country(ies)	Period	Data type	Explains	Methodology	Main Findings
Bashir (1999)	Sudan	1979-93	Yearly bank-level accounting data	Asset size and bank performance	Regression -OLS	Larger banks are more profitable yet have higher leverage.
Samad (1999)	Malaysia	1992-96	Yearly bank-level accounting data	Cost efficiency	Descriptive statistics and ANOVA	Islamic banks are more efficient than their conventional counterparts.
El-Gamal and Inanoglu (2002)	Turkey	1990-2000	Yearly bank-level accounting data	Production technology	Stochastic Frontier Analysis	Islamic banks have a similar production technology to conventional commercial banks.
Hassan and Bashir (2003)	IFIs operating in 21 countries	1994-2001	Yearly bank-level accounting data	Determinants of bank profitability (ROA, ROE, NIM)	Regression -GLS	Controlling for macroeconomic environment, financial market structure, and taxation, the results indicate that high capital and loan-to-asset ratios lead to higher profitability (as does favourable macroeconomic conditions).
Yudistira (2004)	IFIs operating in 12 countries	1997-2000	Yearly bank-level accounting data	Technical and scale efficiency	Data Envelopment Analysis (DEA) and OLS regression	Islamic bank inefficiencies appear relatively low (around 10%) compared with those for conventional banks derived from other studies. Small to medium-sized Islamic banks exhibit diseconomies of scale. Islamic banks in the Middle East are less efficient than those operating outside the region.
Al-Jarrah and Molyneux (2005)	Bahrain, Egypt, Jordan and Saudi Arabia	1992-2000	Yearly bank-level accounting data	Cost and profit efficiency	Stochastic Frontier Analysis	Islamic banks are more cost and profit efficient banks compared to conventional commercial and investment banks.
Mohamad et al. (2008)	21 OIC countries	1990-2005	Yearly bank-level accounting data	Cost and profit efficiency	Stochastic Frontier Analysis	No significant difference between cost and profit efficiency of conventional versus Islamic banks, irrespective of size, age, and geographical location. Islamic banks based in the Middle East and Turkey are more cost efficient than their African counterparts.
Bader et al. (2008)	21 OIC countries	1995-2005	Yearly bank-level accounting data	Cost, revenue, and profit efficiency	Data Envelopment Analysis (DEA)	No significant difference between cost, revenue, and profit efficiency of conventional versus Islamic banks. Note this study uses the same sample as Mohamed, Hassan, and Bader (2008).
Mohamad et al.	Malaysia	1995-2004	Quarterly bank-	Efficiency of	Data	No difference in the efficiency of conventional and

Study	Country(ies)	Period	Data type	Explains	Methodology	Main Findings
(2008)			level accounting data	conventional and Islamic banks	Envelopment Analysis (DEA)	Islamic banks exists in context of Malaysian financial sector.
Chong and Liu (2009)	Malaysia		Monthly interest rates (rates of return for Islamic banks)	Causality relationship between Islamic banks deposits rates and interest rates in conventional banking	Granger causality test	Rates of return on the investment deposits of Islamic banks are closely related to rates on conventional banks' deposits.
Pepinsky (2010)	Indonesia	2008:05/06	Consumers	Views of Islamic finance		Islamic banks are more technically inefficient.
Majid et al. (2010)	10 countries	1996-2002	Yearly bank-level accounting data	Returns to scale and efficiency	Parametric output distance function	Islamic banks have moderately higher returns to scale than conventional banks but appear less efficient due to Shariah compliance. Country effects have a significant impact on efficiency differences.
Baele et al. (2011)	Pakistan	2006:04-2008:12	Monthly business loans	Loans default rate	Hazard function	Default rates on Islamic loans are lower than for conventional loans.
Feisal Khan (2010)	Pakistan	2006:06-2009:03	Monthly bank-account data	Growth deposit accounts		Islamic deposit accounts grow faster than conventional ones
Čihák and Hesse (2010)	Twenty OIC member countries	1993–2004	Yearly bank-level accounting data	Insolvency risk	Regression—OLS and Robust	Small Islamic banks are more stable than small conventional banks; however, large Islamic banks are less stable than their conventional counter-parts.
Rashwan (2010)	15 Countries	2007–09	Bank-level data	Profitability and efficiency over the banking crisis.	Multivariate analysis of variance (MANOVA)	Islamic banks are more profitable and efficient than traditional banks pre-crisis but the opposite is the case post-crisis.
Khan and Khanna (2010)	Pakistan	2008	Survey of customers at two banks	Bank selection criteria	Regression—OLS	Religiosity and wealth matters when opening an Islamic bank account
Hasan and Dridi (2010)	8 Countries	2007-2009	Yearly bank-level accounting data	Factors influencing performance, growth, and ratings over crisis period	Regression—OLS	The credit and asset growth of Islamic banks was more than that of conventional banks from 2008 to 2009 'contributing to financial and economic stability', although profits of Islamic banks fell more than conventional banks in 2009 due to limitations in their risk management practices.
Ongena and Şendeniz-Yüncü (2011)	Turkey	2008	Bank–firm relationships	Firm bank choice	Multinomial logit	Islamic banks mainly have corporate clients that are young, transparent, industry-focused, and have multiple-bank relationships.
Weill (2011)	7 OIC countries	2001-07	Yearly bank-	Market power	Regression—	Islamic banks have lower market power than

Study	Country(ies)	Period	Data type	Explains	Methodology	Main Findings
			level accounting data		random effects GLS	conventional banks.
Weill and Godlewski (2012)	6 Countries	2001-2009	Yearly bank-level accounting data	Yearly loans default	Regression—OLS	Choice for Islamic versus conventional syndicated loans by large firms driven by country-level religiosity and institutional quality, not firm-level quality.
Ghannouci et al. (2012)	8 Countries from MENA and South East Asia	2000-2006	Yearly bank-level accounting data	Determine technology gap	Meta-frontier Approach	No technology differences in conventional and Islamic banks were observed.
Pappas et al. (2012)	22 Countries	1995-2010	Yearly bank-level accounting data	Various bank measures survival probability		Islamic banks are less cost-effective, but have a higher intermediation ratio, higher asset quality and are better capitalized, also during the crisis.
Zaheer et al. (2012)	Pakistan	2002:11-2010:1	Quarterly Banks data	Credit growth		Credit channel of monetary policy through the Islamic banking sector is less potent than through the conventional part
Beck et al. (2013)	141 countries (including 22 OIC member countries)	1995–2007	Yearly bank-level accounting data	Efficiency, asset quality, stability, and business orientation	Regression—OLS Fixed effects, Robust	Few significant differences between Islamic and conventional banks.
Abedifar et al. (2013)	24 OIC countries	1999-2009	Yearly bank-level accounting data	Credit risk, insolvency risk, interest rate risk, and possibility of extracting religious rent	Regression—random effects	Small Islamic banks that are leveraged or based in countries with predominantly Muslim populations have lower credit risk than conventional banks. Small Islamic banks also appear more stable.
Wijnbergen and Zaheer (2013)	Pakistan	2002:02-2010:08	Quarterly Bank data	Asset quality and stability		IFIs > Conventional banks Islamic branch > conventional branch of the same bank (except when small)
Baele et al. (2014)	Pakistan	2006:04-2008:12	Monthly bank data	Load default		Islamic loans less likely to default

Sources: Researcher + adopted from Abedifar et al. (2013) and Baele et al. (2014)

Similarly, the liquidity performance ratios showed neither improvement nor deterioration during the study period. Conversely, the interbank comparison of liquidity performance suggested that BIMB appeared to be statistically more liquid than conventional banks. Furthermore the risk and insolvency analysis suggested that BIMB was less risky and more solvent when compared to the conventional banks. Although the study pioneered the research in this area, it focused only on one Islamic bank which did not represent the whole Islamic finance industry in Malaysia

Borrowing form Agency and Intermediation theories, Bashir (1999) examined analytically and empirically the implications of the bank's scale (total assets) on profitability and risk measures of two Islamic banks based in Sudan. The study found a significant relationship between size and profitability measures i.e. ROA and ROE; this suggested that Islamic banks became more profitable as they grew in size. Furthermore, the study found a negative relationship between size and risk index; this implied that a large size was economically efficient. However, these results lent support to the intermediation theory; this confers a diversification advantage as size increases. However, the sample size, used in the study, was too small to generalize the findings.

While the above studies were county specific, other studies were conducted in a cross-country manner. Hassan and Bashir (2003) analysed the impact of bank characteristics and the overall financial environment on the performance of Islamic banks operating in 21 countries worldwide for the period 1994 to 2001. The results revealed that the profitability measures of Islamic banks responded positively to the increases in capital and negatively to loan ratios. The results suggested, also, that larger equity to total asset ratio led to more profit margins, indicating that adequate capital ratios played a weak empirical role in explaining the performance of Islamic banks. Furthermore the analysis suggested that implicit and explicit taxes had a negative effect on the bank performance measures while favourable macroeconomic conditions, such as higher GDP growth rate, had a positive impact on performance measures. Contrary to the findings of Bashir (1999), bank size was found to be negatively associated with profitability. Likewise, Yudistira (2004) analysed the stability and efficiency of eighteen Islamic banks for the period from 1997 to 2000. The study calculated technical, pure technical, and scale efficiency measures by employing the non-parametric technique, Data Envelopment Analysis. The overall results suggested that the selected Islamic banks remained efficient in creating value during the study period.

However, the banks suffered from the Asian financial crisis during 1998-1999. The study revealed, also, that there were diseconomies of scale for small-to-medium Islamic banks and encouraged merger and accusation. Lastly, the study found that banks, which were not listed, were based in regions other than the Middle East and were comparatively more efficient. However, the study did not compare these results to those conventional banks competing in the same markets.

On the other hand, there is substantial empirical evidence on the performance differences between the two sets of banking i.e. conventional and Islamic financial institutions. Some of the existing studies suggest that both sets of banking i.e. conventional and Islamic are equally efficient and as such there are no performance differences between them. For instance, Hussein (2004) examined the performance of Bahrain as a leading financial hub in the Gulf region. The study compared the profit efficiency of Islamic banks against their conventional counterparts operating in the same market. Using Fourier's flexible functional model, the study estimated the profit efficiency index and reported no significant differences in the profit efficiencies of Islamic and conventional banks. This was despite the fact that many Islamic banks were small in size and acted as venture capital. Likewise, Bader et al. (2008) measured and compared the cost, revenue and profit efficiency of 43 Islamic and 37 conventional banks based in 21 countries worldwide. They assessed the average and overtime efficiency of the sample banks based on firm-specific characteristics such as size, age, and region using static and dynamic panels. Similar to Hussein (2004) the study found no significant differences in the overall efficiency of results between Islamic and conventional banks. In the most recent study, Beck et al. (2013) analysed empirically, during the period from 1995 to 2009, the differences in business orientation, efficiency, asset quality, and stability of 422 conventional and 88 Islamic financial institutions across a sample of 22 countries . The anecdotal evidence suggested no significant differences between the business model of conventional and Islamic banks.

While recent evidence reported otherwise, Majid et al. (2010) investigated, during the period from 1996 to 2002, the efficiency of 23 Islamic and 88 conventional banks (total 558 observations) based in 10 different countries, namely, Bahrain, Bangladesh, Indonesia, Iran, Jordan, Lebanon, Malaysia, Sudan, Tunisia, and Yemen. The study controlled, also, for environmental factors such as country macroeconomic conditions, type of bank and accessibility of banking services and firm-specific factors

i.e. bank size for their potential influence on banks' performance. The results revealed that, during the study period, sample Islamic banks appeared to be associated with higher input usage. The study reported, also, differences in the Islamic banks' efficiencies operating in different geographical locations. Moreover, most sample banks exhibited slight returns to scale, although Islamic banks were found to have moderately higher returns to scale when compared to their conventional counterparts. This suggested that Islamic banking might benefit from increased scale. These findings lent support to the results of Bashir (1999). In a similar vein, from yet another perspective, Ayesha K Khan (2010) posited that religious beliefs could have a significant impact on individual financial choices. The study collected evidence form 33 banks including Islamic banks, operating in Pakistan during the period 2006 to 2009 and submitted that Islamic banks enjoyed substantially higher deposit growth rates than conventional banks. Furthermore he found that, while a recent global financial crisis triggered a fall in deposit growth rates at all other types of banks, it had a positive impact on Islamic banks. This was despite the fact that these banks tended to have lower credit scores when compared to conventional banks.

In a cross-county analysis of Islamic financial institutions, Čihák and Hesse (2010) measured the financial stability of Islamic banks operating in nineteen different banking systems during the period from 1993 to 2004. The sample included 77 Islamic and 397 conventional banks. Using Z-scores as a measure of stability, the study revealed that small Islamic banks were financially more stable than small commercial banks. Also, large commercial banks were financially more stable than large Islamic banks while small Islamic banks were financially more stable than large Islamic banks. This contrast suggests that Islamic banks are more stable when operating on a small scale and less financially stable when operating on a large scale. A plausible explanation for the given results is that it is significantly more complex for Islamic banks to adjust their credit risk monitoring system as they expand in size (Čihák and Hesse, 2010). Abedifar et al. (2013) confirmed these findings for small Islamic banks in a sample of countries with both Islamic and conventional banks. The study gathered evidence from a sample of 553 conventional and Islamic banks from 24 countries during the period 1999 to 2009.

In summary, when comparing the efficiency of Islamic and conventional financial institutions while controlling for time-variant country-fixed effects, the

existing literature highlighted few significant differences in business orientation. However, a substantial body of empirical evidence suggested that Islamic financial institutions (IFIs) were less cost-effective but had higher intermediation and financial ratios, higher asset quality and were better capitalized. Furthermore, the literature suggested, also, large cross-country variations in the differences between conventional and Islamic financial institutions and across IFIs of different sizes.

An interesting element, missing in these studies, particularly those concerning Islamic financial institution, is that none of these studies verified the homogeneity of the Islamic finance industry. This study contributes to the existing body of literature by 1) analysing the homogeneity of Islamic finance industry, and 2) comparing the performance of different Islamic banks operating within the Islamic finance industry.

Hence it is argued that Islamic finance industry was not homogeneous since not all the IFIs were FFIBs. Some IFIs operated as Windows[30]. FFIB refers to a full service intermediary financial institution which conducts its business in accordance with the Shariah and, as such, does not deal simultaneously in conventional banking business. Whereas subsumed under Windows are all those extended hands of various conventional banking groups which offer Islamic finance services alongside conventional banking as their core business.

The Islamic business model of banking is based on Shariah (the legal code of Islamic jurisdiction); this guides Islamic economics while the traditional conventional banking model is based on different ideology and pursues different goals i.e. profit maximization. Simply stated, FFIBs came into being to offer Shariah-compliant solutions to those looking for investment opportunities while not violating their religious beliefs. It should be noted that this is Islamic banking in theory or an ideal of Islamic banking; however, the practice of Islamic banking may be found to deviate from this path. The prominent conventional banking groups came into this business through their extended hands i.e. Shariah-windows after realizing the fact that they were on the verge of losing their clients in certain regions, such as the Gulf, where these conventional banks had a track record of providing banking services from over a

[30]Citi-Islamic, HSBC-Amanah, and Standard Chartered-Saadiq are some of the prominent examples of *Windows*, which are wholly owned subsidiaries of Citi Group, HSBC, and Standard Charted Bank respectively (see, also, footnote 1 on page 17-18).

century[31], way before the birth of Islamic banking (Wilson, 2007; IDB, 2007; Warde, 2010).

Moreover, the governance mechanism of both sets of banking differs, also, in its nature and purpose. Islamic finance is based on trust and requires less monitoring when compared to the Windows which follows the same westernized corporate governance model. Additionally, from an Islamic standpoint (ideally), governance is to achieve social equality and create more value for the society at large, while the conventional governance model focuses on wealth maximization for shareholders. This argument finds supports in the traditional shareholder theories e.g. the stakeholders theory (Freeman and Reed, 1983; Donaldson and Preston, 1995; Freeman 2001). In other words, borrowing from the agency theory of the firm, it is argued that the conventional banking model is based on the central assumption of the self-interests of individuals who tend to maximize their own returns by all means available to the firm. This might result in conflicts between both parties, known as the agency problem (Eisenhardt, 1989; Baiman, 1990; Kunz and Pfaff, 2002). However, FFIBs are not expected to suffer to the same extent due to the trust factors among the parties involved in business. In summary, the operating mechanism of conventional and Islamic banking system is entirely different. The IC stock including human capital, structural capital and capital employed is, also, somewhat different in nature for both sets of banking.

Taking together the significance of the arguments, both sets of banking are expected to utilize their resource base i.e. IC, physical, and financial resources differently and, as a consequence, to achieve different level of performance. Hence, the performance of all the resources of these institutions (FFIBs and Windows) is measured and compared to ascertain the existence of differences in performance between the two sets of banking.

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[31]During the nineteenth century, most of the Muslim world was controlled by the colonial powers from the West. These powers brought the Muslim world into a Western-imposed economic order for which it was ill-prepared (Warde, 2010). In the last decade of the nineteenth century, European commercial banks decided to cater for these occupied Muslim territories. In an attempt to process the financial transactions related to the Suez Canal construction, Barclays Bank opened a branch in Cairo back in 1890s. It is considered to be to be the first commercial bank established in the Muslim world (IDB, 2007). On the other hand, Wilson (2007) stated that the European banks first engaged with the Gulf region about ninety years ago. In the 1920s, the Eastern Bank – predecessor of Standard Chartered Bank proposed a branch on the Island of Bahrain. The permission was subject to the elimination of all interest based transactions. That is when the European banks had to encounter demands for Islamic finance. Simultaneously, the National Handelsbank of the Netherlands – predecessor of ABN-Amro received approval in Saudi Arabia.

4.5 Research Gap for Islamic based Study

Today's knowledge-intensive and modernized economy calls for an efficient allocation of resources. Such an allocation can be achieved through financial systems. An efficient financial system is expected to perform several functions. This includes the vital function of facilitating efficient financial intermediation through the financial market and institutions such as banks. An Islamic bank is a full service intermediary financial institution which abides by Islamic law. IFIs perform the function of financial intermediation by offering various products and services. Products are tangible whereas, in contrast, services are intangible in nature since customers cannot touch or observe these services unless they are being exposed to them. Additionally, given the intangible nature of services, it is difficult to conduct research; have a prototype for market-testing; determine the actual cost of the service; and measure success (Ahmed, 2011b). Being a young industry, Islamic finance is facing all these challenges at present and there are few new research studies in the area.

In order to compete with the well-established conventional banking system, IFIs require competent human intellectual capital (staff) in order to ensure the fullest delivery of services to the end users. As established earlier, Shariah-compliance is at the core of products and services offered by IFIs and this would require careful Shariah-monitoring of the delivery structure and system (structural IC) so that the quality of service remains within the limits of Shariah-law. Equally, IFIs are duty-bound to raise capital only from legitimate sources. Hence, in the Islamic finance industry, product innovation requires all three sources of IC *viz*. human, structural, and financial capital. However, there is a dearth of research which investigates the aspects of their combination in creating competitive advantage.

4.6 Chapter Summary

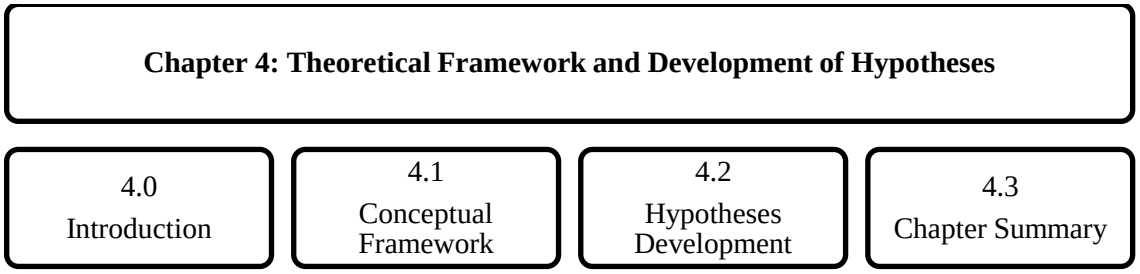
The chapter provided the fundamental concepts and principles which would serve as foundations upon which the significance of IC in Islamic finance was established. The groundwork material included presentation of principles of Islamic banking and finance. Then, the focus turned to intellectual sources of Shariah law and was followed by the various instruments of Islamic banking and finance. This was followed by focusing on empirical studies on Islamic banking and finance. This helped to identify, in both

streams of literature, the research problem and research gap i.e. IC and Islamic banking and finance. The next step is to state the aim of research, research questions and development of research models to test the research hypotheses. The next Chapter deals with all these issues.

Chapter 5: Theoretical Framework and Development of Hypotheses

4.0 Introduction

This chapter describes the theoretical framework and presents the research hypotheses to be tested. There are three main research hypotheses to be tested in relation to the effects of IC, CG and IFIs' firm-specific characteristics on performance in achieving the first research objective. The fourth research hypothesis is related to the effects of IC, CG and IFIs' firm-specific characteristics on performance before and after the financial crisis, thus addressing the second research objective. The fifth research hypothesis is related to the effects of IC, CG and firm-specific characteristics on performance of FFIBs and Windows; this is the third research objective. There is no single theory related to IC. However, the literature considered the firm's resource-based view and agency theory to be applicable when discussing IC.



This chapter is organized as follows. Section 4.1 presents and discusses the conceptual framework employed in this research. Section 4.2 presents the development of the hypotheses and section 4.3 presents a summary of the chapter.

5.1 Conceptual Framework

In recent years, great strides have been made to examine bank's performance by incorporating different theories to yield interesting insights which reflect the unique nature and role of banking in modern economies. Another scholarly stream of literature examined the relationship between IC and bank's performance using different theoretical lens. The literature suggested no single theory when discussing IC; accordingly, this study's conceptual framework was based on two different theories,

namely, resource-based view of the firm and agency theory. The following sections discuss the said theories.

5.1.1 Resource-based View of the Firm

In recent years, the resource-based view, which is associated with competitive advantage, has become one of the standard theories in strategy (Hoopes et al., 2003) and has achieved widespread dissemination in academic literature and management practice (Acedo et al., 2006). The Resource-Based View (RBV) of the firm suggests that firms can achieve and sustain competitive advantages by mobilizing their valuable resources and capabilities which are inelastic in supply (Barney, 1991; Peteraf, 1993;Wernerfelt 1984). Furthermore, Toms (2010) emphasized this argument and stated that the RBV explained either competitive advantage or delivery of sustained above-normal returns (Peteraf, 1993) or economic profit, in terms of firms' bundles of resources (Amit and Schoemaker, 1993), which were valuable, rare, inimitable and non-substitutable (Barney, 1991).

Grant (1991) asserted that a firm's success and profitability was determined by not only the external factors but, also, by the internal factors[32]; this is the idea upon which the resource-based theory is grounded. According to Barney (1991) and Peteraf (1993), each enterprise is treated as heterogeneous under this perspective because heterogeneous character can be maintained for a longer-term and, thereby, having long-term profit (income). Such imperfect (heterogeneous) mobility of resources is necessary in order to transform a short-run competitive advantage into a sustainable long-run competitive advantage. Barney (1991,p. 102) stated that "a firm is said to have competitive advantage when it is implementing a value-creating strategy not simultaneously implanted by any current or potential competitors ".

[32]In the context of this study which is based on financial institutions, internal factors represent the bank-specific characteristics i.e. bank-size, bank-age, bank liabilities, liquidity structure, ownership structure, governing boards, operating region and core business activity. On the other hand, macroeconomics factors such as chartering rules, financial regulations, government regulations, GDP growth, effective tax rate, inflation rate, and market volatility, etc. are all factors which are subsumed under external factors.

Within the resource-based framework, the firm is viewed as a nexus of resources and capabilities. Resources confer enduring competitive advantages on a firm to the extent that they are not bought freely and sold in the spot market (Lado and Wilson, 1994). To the extent that these firm-specific resources and capabilities yield economic benefits that cannot be duplicated perfectly through competitors' actions, they may be potent sources of sustained competitive advantage.

Richard (2000) argued that, from a strategic human resource management standpoint, the most important assets for a service provider, particularly a bank in gaining and maintaining competitive advantage, was its people i.e. the human IC. As other sources of competitive advantage, such as technological capabilities (structural IC) and physical and financial resources (capital employed) have become easier to emulate, the crucial differentiating factor between firms can be how human IC works within an organization (Pfeffer, 1994).

In the context of IFIs, the concept of human IC is that people possess knowledge (knowledge of Shariah in particular), skills and experience that provide economic value to the IFIs. Barney and Wright (1998) noted that in order for human IC to contribute to sustainable competitive advantage, it had to create value, appear rare and remain difficult to imitate. The position of Shariah knowledge and knowledge of contemporary economics, embedded in people affiliated with IFIs, serve as a source of sustained competitive advantage for IFIs because the combination of such knowledge source creates value that is both rare and difficult to imitate. Additionally, to be a source of sustained competitive advantage (Barney, 1991; Hoopes et al., 2003), resources and capabilities must be:

1. *Valuable:* A valuable resource enables a firm to improve its market position relative to competitors (Peteraf, 1993). The Islamic finance industry is expanding and catering for a bigger market and, as IFIs reach out to a broader customer base, they need employees (human IC) who understand particular customer preferences and requirements. Equally, there is a need for efficient structural IC (i.e. technological capabilities) to deploy record and maintain financial capital (capital employed). All such resources, particularly human IC, are valuable for IFIs since they can help the IFIs to improve their market position relative to their conventional rivals.

2. *Rare:* To be of value in sustaining competitive advantage, resources must be available in short supply relative to demand. Barney (1991) posited that a strategic asset had to be rare in order to offer sustained competitive advantage. If it is assumed across the Islamic finance industry that Shariah scholars as a human IC resource do not create value, when in fact they do, there is tremendous potential for IFIs to exploit the rare characteristics of a diverse employee (SSB) base for competitive advantage. The number of financial institutions, offering Shariah-compliant banking solutions, is growing rapidly; ultimately, this calls for more controlling and monitoring mechanism provided by a balanced corporate governance mechanism including an effective SSB. However, not only are scholars well-versed in Shariah and contemporary knowledge of economics are rare but, also, they are in short supply. As a consequence, it is not surprising to see the same Shariah scholars sitting on several Shariah supervisory boards across the industry (Nawaz, 2013b). Additionally, most of the conventional banks, offering Shariah-compliant products, do not employ a permanent SSB but tend to hire Shariah scholars when needed.
3. *Isolated from imitation or substitution:* To be rare, resources need to be immobile and costly to imitate or to replicate. In today's knowledge-intensive economy, most of the valuable resources are protected by knowledge (that is, human IC) while others e.g. copyrights and patents (structural IC), are protected from imitation by law (property rights). The nature of human IC is recognized by the proponents of the resource-based view since they emphasise its ambiguity, subjectivity and creativity (Pfeffer 1994). Furthermore, knowledge-based resources depend upon large numbers of people engaged in coordinated, creative action providing a firm with a competitive advantage (Barney, 1991; Richard, 2000). IFIs are co-governed by the religious scholars and, hence, work in close coordination with the SSB which ensures the Shariah-compliance of all their products and services. Arguably, IFIs have more resources in the form of human IC to draw on and should be more creative and innovative. Therefore, knowledge-based resources such as well-versed Shariah advisors on the SSB, allow an IFI to succeed by giving it the skills needed to adapt its products and services to market needs and to meet competitive challenges. It is not to say that

the knowledge-based resources, possessed by the IFIs, are difficult to be imitated by their conventional rivals but actually quite the contrary[33]. Although some conventional banks offer Shariah-compliant banking solutions to their clients, it took them some time to acquire the required resources and, by then, the imitated institution (the IFIs) may have developed their skills further. Therefore, it seems difficult for conventional financial institutions to imitate the Islamic banking model in its full capacity.

Since Barney (1991) and Wernerfelt (1984) published their original work, a distinction has emerged in the RBV literature between resources and capabilities. Amit and Schoemaker (1993) defined resources as all input factors both tangible and intangible, human and nonhuman which were controlled or owned by the firm which entered into the production of goods and services to satisfy human desires. Grant (1991) added that resources were the inputs into the productions process whereas Wernerfelt (1984) stated that a resource meant anything which could be thought of as strength or a weakness of a given firm. More formally, a firm's resources, at a given time, can be defined as those (tangible and intangible) assets which are tied semi-permanently to the firm. Examples of resources are: brand names; in-house knowledge of technology; employment of skilled personnel; trade contracts; machinery; efficient procedures; capital etc.

On the other hand, capability is joint resources to produce any work or activity (Grant, 1991; Olalla, 1999), and the firm's capacity to deploy resources. Unlike resources, capabilities are based on developing, carrying, and exchanging information through the firm's human capital (Amit and Schoemaker, 1993).

A more simple and clear classification was given by Makadok (2001) who simplified both concepts and suggested that a resource was an observable (but not necessarily tangible) asset which could be valued and traded i.e. on the one hand, a brand, a patent, a parcel of land or a license and capability. On the other hand, it was unobservable (and, hence, necessarily intangible), could not be valued, and changed hands only as part of its entire unit. Most significant resources for an IFI are, but not limited to, knowledge held by its people, unique technological resources to handle

[33]Some leading conventional banks (i.e. Citibank and HSBC) have established separate entities by replicating the Islamic banking model while others (e.g., BNP Paribas and Lloyds bank) are offering selected Shariah-compliant products under the same roof. As such, the latter does not employ a permanent SSB but hire Shariah consultants when required.

transactions, and its exclusive customer base i.e. individuals and firm looking for investment opportunities while not violating their religious beliefs or willing to invest in a risk sharing mechanism offered by the IFIs.

Referring to the definition of intellectual capital IC, all the intangible resources listed above, especially those by Wernerfelt (1984) were mostly IC, i.e. brand names, in-house knowledge. Barney (1991) argued that:

> *"Sustained competitive advantage derives from the resources and capabilities a firm controls that are valuable, rare, imperfectly imitable, and not substitutable. These resources and capabilities can be viewed as bundles of tangible and intangible assets, including a firm's management skills, its organizational process and routines, and the information and knowledge it controls"*

The above view is in line with views on the characteristics of a knowledge-rich or high-IC firm as suggested by Brooking (1996), Edvinsson and Malone (1997), Stewart and Ruckdeschel (1998), and Dzinkowski (2000).

As discussed in chapter 2, IC can be classified into human IC and structural IC whereby, the former is associated with the role of thinking and reflexivity (i.e. the knowledge, professional skill and experience, and creativity of employees) while the latter is concerned with efficiency, re-production and re-use of knowledge (structural IC consists of innovation capital, which are intellectual assets such as patents, and process capital, which are organizational procedures and processes). All the resources, linked by the various authors with RBV, are, in effect, IC. Cañibano et al. (2000) noted:

> *"Both tangible and intangible assets are perceived as potential strategic assets. This resource-based view of the firm, including the benefits of both tangible and intangible assets, is gaining acceptance in the accounting, economic and strategic management literature, following positive results of linkages between firm resources and measures of performance (p. 215)"*

IC is a strategic asset which can lead to firms' higher performance and sustaining competitive advantage. Equally, sub-components of IC *viz*. human capital and structural capital are perceived to be potential strategic assets under RBV. An IFI's most significant capability of is to provide an alternative banking system which is more stable and resistant to the financial turbulence. The IFI performs this function through its human intellectual capital base and possesses certain skills in mobilizing both the IC

and physical resources. Hence, the resource-based view of the firm relates closely to IC and, therefore, RBV is used as an economic foundation to examine the IC's role in helping IFIs obtain competitive advantage.

5.1.2 Agency Theory

According to Eisenhardt (1989), agency theory is directed at the ubiquitous agency relationship in which one party (the principal) delegates work to another (the agent) who performs that work. Agency theory attempts to describe this relationship using the metaphor of a contract whereby the agent's rights and responsibilities are specified in their mutually agreed-upon employment relationship. The terms of employment include compensation arrangement, information system, allocation of duties, and allocation of ownership rights (Baiman, 1990).

Hence, agency theory reflects on principal-agent relationship[34] in which the principal is represented by the owners or shareholders while the agent is represented by the firm's managers and staff and the two parties are mediated by a contract. The principals offer a contract to the agent who, then, chooses those actions required to maximize their overall utility, restricted by contractual constraints. This implies that the firm's managers and the staff are paid by the shareholders to work on their behalf and, in return, the managers and staff will do their best to increase the shareholder's value by increasing the value of the company. Also, this will increase their interest since they will be rewarded normally with a bonus, an increase in salary, or job promotions. The available literature on accounting and finance classified the contractual relationships into employment contracts (between shareholders and managers) and lending contracts (between debt-holders and shareholders). Such contractual safeguards are erected to mitigate the agency problem between principal and agent.

Unlike conventional finance, the Islamic finance contractual relationships are complex and dynamic since contracts are drawn up in the divine guidance of Shariah. This restricts the exploitative elements i.e. riba (interest), gharar (uncertainty) and

[34]Ross (1973) posited that the principal-agent relationship was not limited to shareholders and management alone, such a relationship could be observed in each stage of the organization hierarchy. For instance, the relationship between governing board (principal) and CEO (agent), who delegates the job further accordingly in order to achieve organizational goals. Thus, it entails a set of agreements between different parties involved in an organization.

speculation. In other words, in the conventional financial system, contracts are drawn up solely based on material information, facts and conditions, whereas the Islamic financial contracts in are made up of material and ethical components (Aljifri and Kumar, 2013). Iqbal and Mirakhor (2004, p. 55) posited that "contracts in Islamic financial system consist of two elements, one the material fulfilment and two the sincerity, truthfulness, and insistence on rigorous and loyal fulfilment of what he/she had consented to do".

Hence, the contracts in conventional and Islamic financial system are similar in terms of material facts but they differ significantly in ethical components. Ideally, Islamic financial contracts are based on Shariah. Consequently, they rely substantially on an ethical dimension and any breach of the ethical codes, set by the Shariah principles, can render the contract void. Furthermore, Islamic financial contracts are drawn up based on the available financial instruments. In order to understand the complexity underlying these contracts, it is helpful to recall the typical statement of financial position of an Islamic bank. Table 4.1 presents the general intermediation using Islamic contracts which can be found in the statement of financial position of most Islamic banks.

Table 4.1

Statement of Financial Position of an Islamic Bank

Contract type	**Assets**	**Liabilities**
Asset-based	Trade Financing - Salam - Murabaha - Ijarah / Istisna	Demand Deposits - Current Account - Savings Account
Risk-sharing based	- Mudarabah - Musharakah	- Investment Accounts - Restricted Investment Accounts (RIA) - Unrestricted Investment Accounts (URIA)
Fee-based	Services (Jo'ala, Wikala, Kifala)	

Focusing first on the asset side, the available contracts can be classified into asset based (i.e. Salam, Murabaha and Ijarah), risk-sharing based (i.e. Mudarabah and Musharakah), and fee-based (e.g., Jo'ala, Wikala, and Kifala). These three categories cover almost all the types of financial contracts offered by the Islamic financial institutions and,

therefore, they cover all the relevant types of agency relationships. On the liabilities side, funds are classified into two types; 1) demand deposits (principal) whereby funds are accepted for the purpose of investment and authority is provided to IFIs (agent) to act on behalf of depositors; and 2) special investment accounts (principal) whereby the IFIs (agent) channel funds mainly through Mudarabah and Musharakah by.

To summarise, in the context of Islamic finance, *Rab-ul-Maal*[35] (principal) is the capital provider and *Mudarib* (bank), as the agent, is liable to manage these funds in the best interests of the depositors and shareholders. All such deposits are based on the Islamic concept of *Amanah* (trust) and, hence, such contracts are based on mutual trust amongst the principals and agent. The agent is expected to utilise both tangible, in the form of structural IC, and intangible, in the form of personal knowledge, skills and expertise resources, to create value for the principals. In other words, the agent is expected to invest the provided capital in Shariah compliant investment opportunities while using knowledge about and relationships with the market. Moreover, the agent is not expected to pursue personal interests which would lead ultimately to agency problems.

In synthesizing the above argument, from a conventional standpoint, agency theory is based on the central assumption of self-interests of individuals. It argues that both the principal and the agent tend to maximize their own returns by all means; this might result in conflicts between both parties (known as the agency problem). In contrast, Islamic banking is based on trust and agents are entrusted by the principals to perform their obligations in an ethically correct way.

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[35]In its simplest form, providers of funds are the principals while services providers are the agents. In IFIs, principals are represented by shareholders, depositors and investment account holders. Investment account holders are sub-classified into restricted investment account (or RIA) holders and unrestricted investment account (or URIA) holders. In the case of the former, funds are channelled through restricted-mudarabah contracts in conjunction with RIA funds for investment purposes. In this sense, funds, available to the IFI from RIA holders, are not fully under its control since the account holder has the right to determine the purpose or manner of investing his or her funds. For instance, the RIA holder may not allow the IFI to combine his funds with those at hand of the IFI i.e. other deposits. While, in the former case, funds are channelled through unrestricted-mudarabah contracts in conjunction with URIA funds for investment purposes. The URIA holders entrust the IFIs as their agents and authorise them to invest their funds in any manner which the IFI deems appropriate. As such, the IFI can combine its funds with those of the URIA holders, or likewise the funds of URIA holders with other sources of funds available to the IFI, such as current accounts, in order to use the pooled amounts in providing financing facilities or undertaking investment projects. However, IFIs, are restricted to adhere to Shariah guidelines pertaining to investment (see *inter alia* Ayub, 2009; Iqbal and Mirakhor, 2011; Kettell, 2011).

Agency theory represents, also, important CG issues in both the financial and nonfinancial industries. From a corporate finance literature perspective, an obvious advantage of IFIs is their greater ability to allocate risk optimally though the sharing of the project return between capital provider and entrepreneur (Sarker, 1999). Therefore, IFIs are expected to be less prone to the principal-agent problem. Consistent with the previous literature on CG studies (Jensen, 1986; Dalton et al., 2003; Salama and Putnam, 2013), this study adopts agency theory to test the hypothesis related to the corporate governance of IFIs.

5.2 Development of Research Hypotheses

As explained in Chapter 1, this study's research objectives were three fold: firstly, to examine the effects of IC and physical capital on the performance of IFIs; secondly, to measure the effects of corporate governance features on the performance of IFIs; and, thirdly, to analyze the effects of firm-specific variables on the performance of IFIs. Based on these research objectives, the following sections develop the research propositions.

5.2.1 Value added intellectual capital (VAIC) and performance

Pulic's early research (*see* Pulic, 1997, 2002 & 2004) on the Austrian, Croatian, and Australian banking sectors revealed the importance of IC in the financial sector. The research results highlighted the fact that there was a strong interaction between IC and organizational corporate success. Pulic's research demonstrated that banks, with higher expenditures on IC components, were more profitable and had better financial performance. Pulic and Bornemann (1997) were the first to study the impact of IC in the banking industry. Their study measured the IC performance of 24 largest Austrian banks for the years 1993-1995 and submitted that the increased efficiency in IC was the simplest, cheapest and most secure way to ensure sustainable success and the most important resource of corporate success. Pulic (2002) measured the IC performance of Croatian banks for the years 1996-2000 by using VAIC^{TM} as a methodological tool. The study revealed significant differences in bank ranking based on efficiency and performance. Similarly do Rosário Cabrita and Vaz (2005) provided empirical evidence that IC was related substantively and significantly to the organizational performance in

the Portuguese banking industry. In a similar vein, Ting and Lean (2009) tested the relationship between IC and the financial performance of Malaysian financial institutions for the years 1999-2007. Using the same methodological tool, the empirical findings revealed that there was a significantly positive relationship between VAIC^{TM} and return on assets (ROA). The authors concluded that VAIC^{TM} indicated efficiency in creating corporate value or the extent of corporate intellectual ability. In other words, an increase in value creation efficiency has a positive influence on a firm's profitability. Therefore, the study suggested that it was necessary to maximize the utilization of resources, specifically IC, for financial institutions in order to maximize the company's profits. Such strong association between IC efficiency and banks' performance was confirmed, also, in studies conducted in Turkey and Thailand. Yalama and Coskun (2007) examined the impact of VAIC^{TM} on a bank's profitability and revealed that IC was a more important factor than CE (physical and financial capital) for banks listed on the Istanbul Stock Exchange Market. Saengchan (2008) studied the relationship between IC capability and financial performance of Thai commercial banks for the period from 2000 to 2007. The study confirmed that IC acted as a major source of corporate advantage to Thai banks since IC efficiency of was associated strongly with the banks' profitability. Similarly, Appuhami (2007) found that a firm's IC had a significantly positive relationship with its investors' capital gains and shares. The findings enhanced the knowledge base of IC and development of competitive advantages in an emerging economy like Thailand.

In summary, the above mentioned studies examined the impact of IC on business performance as measured by the firm's market valuation, profitability, productivity, return on equity, etc. These studies documented mixed evidence about the relationship between IC and a firm's overall performance. Some of the literature tended to treat the sub-components of IC i.e. human IC and structural IC as completely independent constructs and, thereby, lost sight of the whole IC. This is not to say that defining and understanding the subcategories of IC is unimportant; quite the contrary. In fact, developing theoretically based subcategories of IC is necessity in order to advance our ability to operationalize and understand the very abstract and sometimes confusing IC concept. Youndt et al. (2004) posited that treating human IC and structural IC as discrete, unidimensional phenomena tended to simplify reality by not explicitly acknowledging the potential patterns of coexistence among these differing types of IC.

Therefore, in order to fully understand how IC develops and drives performance, it may be helpful to look at an organization's overall profile of IC in aggregate and to focus independently on individual parts.

Accordingly, it is expected that the higher a firm's aggregate stock of IC, the more successful the firm will be and the greater will be its competitive advantage. In other words, the higher the value added intellectual coefficient of IC (hereafter, VAIC) that the IFI has, the higher will be its accounting and market performance based on ROA and Tobin's Q respectively. Hence, the main hypothesis to be tested is that IC is associated positively with the performance of IFIs (i.e. accounting performance based on ROA and market performance based on Tobin's Q) as measured by the additional net value created. The hypothesis is in line with the resource-based view of the firm by anticipating a positive contribution of IC as a strategic asset on the performance of IFI. Therefore, the first hypothesis is as follows:

> *Hypothesis 1: There is a significant positive relationship between VAIC and the performance of IFIs based on ROA and Tobin's Q.*

The extant literature suggests that typically IC is understood to consist of human IC; this is creative and structural or organizational IC which consists of best practices. Murthy and Mouritsen (2011) suggested that it was necessary to measure the contribution of each resource, particularly for the financial services industry which was relatively less researched. Accordingly, sub-components of VAIC *viz*. HCE, SCE, and CEE were measured separately, to examine which of the three components contributed most to the value creation of IFIs.

5.2.1.1 Human capital efficiency (HCE) and performance

Colombo and Grilli (2005) suggested that firms with greater human IC (i.e. higher education or skill) were likely to have better entrepreneurial judgment and as long as human IC continued to be developed, staff could improve their job performance and, ultimately, improve the firm's performance (Hsu, 2007). Human IC increases as staff accumulate specialized information, skill and know-how; this allows them to communicate efficiently and effectively and, thus, reduces decision-making errors and improves performance (Luthans and Youssef, 2004). This inference found, also, support in other literature streams. For instance, human capital theorists (Becker, 1964; Schultz,

1961), simply reason that an increase in worker skills, knowledge, and abilities most likely translates into increased organizational performance. Likewise, Dakhli and De Clercq (2004) suggested that a firm's stock of human IC would influence its profitability.

Empirical evidence from the financial sector suggested a significant relationship between human IC and firm performance. Mavridis (2004) analyzed 141 Japanese banks for the period 2000 to 2001. The author focused on the actual status of human and physical capital and its impact on the 'intellectual' added value-based performance. The study revealed that the best performing banks were those who had mainly very good results in the usage of their IC, particularly, the human capital. In Malaysia, Goh (2005) measured, using VAIC^{TM} methodology, the IC performance of Malaysian commercial banks for the years 2001 to 2003,. The results showed that the value creation capability of Malaysia's commercial banks was attributed largely to HCE. This means that investment in human IC yields a relatively higher return than investments in physical and structural IC. A later study by Ting and Lean (2009) confirmed these findings. Employing the same methodology, Kamath (2007) analyzed the value-based performance of the Indian banking sector for the years 2000 to 2004. The results showed that foreign banks were the top performers in HCE. Similarly a recent study by Mondal and Ghosh (2012) suggested that, when the measure of IC was classified into major components, HCE played a major role in enhancing the returns of banks and suggests that an increase in HC investment enhances the banks' financial performance; this is consistent with the earlier findings of Goh (2005) in Malaysia. Recently, Joshi et al. (2013) examined the IC performance of the Australian financial sector for the period from 2006 to 2008 and reported that all Australian-owned banks had relatively higher HC efficiency than CE and SC efficiency. Mention and Bontis (2013) reported that, based on the questionnaire survey of both the Belgian and Luxemburg banking sectors, human IC contributed both directly and indirectly to business performance in the banking sector.

All in all, the empirical evidence suggested human capital to be the performance driver in the financial sector. In the case of IFIs, human IC is important since employees are expected to not only have conventional knowledge and skills related to the provision of such services but, also, to have a good knowledge on *Shariah* because this will enhance the credibility and reputation of IFIs in the market place. The knowledge,

embedded in the human IC and employed by the IFIs, is valuable, rare, and isolated from imitation or substitution. As suggested in the resource-based view of the firm, the next hypothesis is as follows:

Hypothesis 1a: There is a significant positive relationship between HCE and the performance of IFIs based on ROA and Tobin's Q.

5.2.1.2 Structural capital efficiency (SCE) and performance

Structural IC provides an environment which enables an organization to create and leverage knowledge. An organization with strong structural IC will have a supportive culture which encourages employees to try and learn new knowledge (Florin et al., 2003). De Brentani and Kleinschmidt (2004) suggested that an organization's operation processes and the organizational commitment of sufficient resources had a significant impact on performance. A similar suggestion was made by Youndt et al. (2004), who found structural IC to be associated typically with financial returns and Tobin's Q. Likewise, Hsu and Wang (2012) posited that structural IC, i.e. operations, procedures and the processes of knowledge management, propelled organizations' value creation activities which had a positive effect on their performance. In other words, firms require advanced technologies to compete in today's fast-paced economy and, therefore, greater care is needed to manage structural IC so that the required level of performance is achieved. Additionally, investments in structural IC can have a positive impact on corporate performance.

For example, Huang and Liu (2005) employed multiple regression models to examine the relationships between innovation capital and information technology (IT) capital (i.e. structural IC) and a firm's performance. They reported that investment in structural IC had a positive effect on performance. Likewise, El-Bannany (2008) applied variables to study the IC performance of UK banks for the years 1999-2005. The study found that investments in IT systems, banks' efficiency, barriers to entry and efficiency of investments in IC variables had a significant impact on IC performance.

Murthy and Mouritsen (2011) argued that there might be trade-offs between the elements of IC, suggesting that multiple forms of intellectual capital might be unproductive. Consequently, not all investments in the elements of IC are profitable for IFIs (Youndt et al., 2004; Li, 2001). Recent empirical evidence extended support to this

argument. Mention and Bontis (2013) found human IC to be the value driver in the Belgian and Luxemburg banking sectors whereas structural IC was found to be related positively to business performance. This suggests that structural IC is not the main value driver; however, it offers some kind of supporting mechanism to the addition of overall value.

Particularly in the case of the Islamic finance industry and given that it is a relatively young industry with a less stabilized structural capital, expenditure on structural IC is expected to be high. This may reflect negatively on the performance indicators. Moreover, IFIs adopt different structural processes and systems to track and record their transactions. Unlike the conventional banking system, penalty on late payment, for instance, is not credited into the account receivables. Such penalties are considered to be interest and are subject to a charity account set up for the benevolence loans and other charitable purposes. This requires development and investment in the structural processes which will enhance their performance. Furthermore, IFIs adopt a rare structural mechanism which is not imitated by their conventional rivals. This argument is in line with the resource-based view of the firm; this attributes superior economic performance to organizational resources and capabilities (Bharadwaj, 2000). Since RBV recognizes explicitly the importance of tangible and intangibles, it offers a significant opportunity to explore these theoretical complementarities by examining the relationship between structural IC resources and performance of IFIs. Therefore, the next hypothesis is as follows:

Hypothesis 1b: *There is a significant positive relationship between SCE and the performance of IFIs based on ROA and Tobin's Q.*

5.2.1.3 Capital employed efficiency (CEE) and performance

Empirical evidence suggested a positive relationship between CEE and corporate performance. For instance, Mavridis (2004) found a significantly positive correlation between value added and CEE. Similarly, Kamath (2007) found Indian public sector banks to be the top performers in CEE when compared to their foreign counterparts. In an extended research on the Hong Kong Stock Exchange, Chu et al. (2011) reported that structural capital enhanced corporate profitability but CEE was still a major determinant of the financial performance.

Most of the IFIs are based along the Arabian Peninsula and are blessed with the petrodollar. The powerful groups in the Gulf-region, particularly the Royal families, their extended families, and to a lesser degree those having close working relationships with them (Hudaib and Haniffa 2009). These groups own most of the wealth in the Gulf-region. This provided Islamic banking with an opportunity to lure the huge sums of petrodollars amassed in these hands. A major proportion of this wealth is channeled through IFIs for investment purposes since the clients seek investment opportunities which do not violate their religious obligations. IFIs offer such a platform. This brings huge sums of money into the Shariah-compliant business and increases the physical and financial bases of IFIs. The financial capital, raised from shareholders and depositors, must be managed efficiently as it is based on the Islamic concept of *amanah* (trust). Since no interest is involved in the Islamic way of banking and profit, it is earned solely through employing capital in different projects. Therefore, the efficiency of employed capital is expected to be associated positively with the overall performance of IFIs. Hence, the next hypothesis is:

> Hypothesis 1c: *There is a significant positive relationship between CEE and the performance of IFIs based on ROA and Tobin's Q.*

Most studies, including those on the financial services industries, examined generally the association between IC and firm performance in a single country context while controlling for firm-specific variables i.e. firm-size and leverage. Vafeas and Theodorou (1998) suggested that attempts to establish the existence of such an association without controlling for the influence of corporate governance characteristics might ''lead to spurious relationships and misguided conclusions''. This study attempts to mitigate this concern. In a departure from previous research, this study examines empirically the impact of corporate governance features i.e. board size, board composition, leadership structure, size of Shariah supervisory board (SSB), and size of audit committee (ACS), on the performance.

5.2.2 Corporate governance (CG) and performance

The main theoretical framework for the vast majority of corporate governance research is represented by the agency theory (Shleifer and Vishny, 1997; Dalton et al., 2003). Agency models imply generally that managers and shareholders tend to have divergent

interests (Salama and Putnam, 2013) and, as a result, when monitoring is lax, managers may pursue corporate strategies that are not in the best interests of shareholders (Jensen and Meckling, 1976; Jensen 1986).

Previous research indicated that corporate managers were generally risk-averse due to their dependence on the firm for their immediate livelihoods (Vafeas and Theodorou, 1998). With a preference for reducing uncertainty, corporate managers are likely to support policies and strategies related to Physical Capital (PC) over IC resources because they are better able to directly control the former (Mahnke, 1997). This condition arises because ownership of PC resources is attributed to shareholders who, then, pass responsibility for their use to corporate management (Ho and Williams, 2003). Consequently, control of IC resources may not be within the direct power of a corporate manager. Without direct control, corporate managers have less ability to apply *ex ante* monitoring criteria and cannot make adjustments as easily on a continuous basis to reduce uncertainties (Mahnke, 1997).

Correspondingly, corporate governance advocates highlighted the potential association between corporate governance features and firm performance (Blair, 1995; Mahnke, 1997; Haniffa and Cooke, 2002; Zaman et al., 2011). An extant literature examined the impact of corporate governance on firm value. In the US, Gompers et al. (2003) analysed the association between corporate governance and long-term equity returns, firm value based on Tobin's Q, and accounting measures of performance based on ROE. The study revealed that well-governed firms outperformed their poorly governed counterparts. Furthermore, well-governed firms offer higher ROE; are valued more highly; and their accounting statements show a better operating performance. Bauer et al. (2004) replicated the same to examine the relationship between corporate governance and firm value in the context of European firms operating in fifteen different countries across Europe. The study revealed that the said relationship weakened substantially after adjusting for country differences. Contrary to Gompers et al. (2003), the study found a negative relationship between ROE and net profit margin and proxies used to analyse the relationship between corporate governance and firm performance. These findings suggest a significant relationship between corporate governance and firm value. Moreover, the results of Salama and Putnam's (2013) recent study suggested that firms with higher quality corporate governance performed better and traded at higher values.

Islamic banking is an eastern concept while conventional corporate governance is a western concept. Therefore, it would be interesting to examine if the conventional corporate governance model fits to the Islamic way of banking. The effect of each performance variable is analysed separately. The following sections develop hypotheses related to each CG features.

5.2.2.1 Board size

Although previous studies showed an association between board size and corporate performance (Provan, 1980; Kidwell and Bennett, 1993; Goodstein et al., 1994; Alexander et al., 1993), no consensus existed as to the direction of this association. Agency theory tenets argued generally for smaller boards reasoning that as size increased control and monitoring functions were impaired (Judge and Zeithaml, 1992; Dalton et al., 1999). Agency theorists advocate, also, that a larger board size increases the opportunity for manipulation by corporate management. For example, Jensen (1993, p. 865) argued that when ‘‘boards get beyond seven or eight people they are less likely to function effectively and are easier for the CEO to control”. From an Islamic standpoint of Shura (consultation) and in accordance with RBV, a large board size is better for IFIs as the functioning of an Islamic bank requires diversified and constant advisory. Therefore, the hypothesis, tested here, is:

> Hypothesis 2a: *There is a significant positive relationship between board size and the performance of IFIs based on ROA and Tobin’s Q.*

5.2.2.2 Board composition

Board composition is defined as the proportion of outside directors to the total number of directors, thereby making a distinction between executive and non-executive directors (Haniffa and Cooke, 2002). Several theoretical perspectives (e.g. agency theory, resource-dependence theory and stakeholder theory), support the proposition that outside directors are instrumental in guiding a firm’s performance.

The premise of agency theory is that non-executive directors are needed on the board to monitor and control the action of executive directors due to their opportunistic behaviors. On the other hand, the resource-dependence theory proposes that non-

executive directors provide firms with links to the external environment due to their expertise, prestige and contacts.

While the above reasoning appears compelling, there were mixed empirical results of the association between the proportion of outside directors and corporate performance. For example, Fama and Jensen (1983) contended that inclusion of outside directors on boards would result in improved corporate performance. However, this expectation was questioned by Baysinger et al. (1991), who argued that, in the absence of detailed information, outside directors might be unable to understand business well enough to make a meaningful contribution to improve the firm's performance. Also, from a stakeholder perspective, stakeholder orientations are likely to be more diversified amongst outside directors relative to inside directors (Youndt et al., 2004). Finally, as Wang and Dewhirst (1992, p120) stated, ‘‘outside directors have a very strong stakeholder orientation, and recognize that their responsibility encompasses more than shareholders and are very conscious about the needs and expectations of the various constituencies of their firms’’.

Despite conflicting arguments and inconclusive empirical results, board composition is a potentially important factor affecting corporate performance. Hence, the study controls, also, for the proportion of Non-Executive Directors (NEDs) on the board. A high proportion of NEDs suggests better governance because such directors have an interest in protecting their own ‘reputation capital’ and avoiding potential financial losses that may result from litigation (Young et al., 2000). IFIs need more NEDs with different skills and expertise e.g. Islamic jurisprudence, Islamic accounting, knowledge of accounting standards (IFRS and AAOIFI) etc.. Accordingly, the extended research hypothesis is:

Hypothesis 2b: *There is a significant positive relationship between proportion of NEDs on the board and the performance of IFIs based on ROA and Tobin’s Q.*

5.2.2.3 Leadership structure (Role duality)

The impact of duality on corporate performance was of interest to advocates of various schools of thought (Hambrick and Mason, 1984; Dalton and Kesner, 1985; Patton and Baker, 1987). Previous research on corporate governance suggests that the board's monitoring efficiency is enhanced when the CEO has limited power in influencing the

board's agendas and actions (Yermack, 1996; Lehn and Zhao, 2006). Jensen (1993) contended that the presence of a dual CEO (when the CEO simultaneously serves as chairman of the board) was a strong indication of an inefficient board of directors and he maintained that, for the board to be effective, it was important to separate the CEO and chairman positions. Correspondingly, Haniffa and Cooke (2002) suggested that separation of the roles of CEO and chairman would help enhance monitoring quality. The arguments, taken together, indicate that the relationship between leadership structure and performance appears to be ambiguous. Hence, it is interesting to analyze the direction of the relationship in the context of this study. Therefore, the next hypothesis is as follows:

> Hypothesis 2c: *There is a significant relationship between role duality and the performance of IFIs based on ROA and Tobin's Q.*

5.2.2.4 Size of Shariah supervisory board (SSB)

Co-governance[36] by the religious leaders is another unique aspect of corporate governance concerning IFIs. The underlying principle of Islamic banking and finance is the *Shariah*-compatibility of all its products and services. In order to comply with this rule, Islamic finance is co-governed by the *Shariah* scholars (advisors), who specialize in Islamic law and jurisprudence sometimes with a background of economics and finance (Ayub, 2009; Schoon, 2010).

The SSB's obligations include advising on some specific issues with reference to *Shariah* and *Shariah* auditing to satisfy the stakeholders since it does not operate as an *ex-post* compliance medium. Furthermore, *Shariah* advisors have vested interests, also, in fulfilling their responsibilities since, besides enhancing their own future advisory opportunities, they need to protect the reputation of Islam (as the whole business is based on religious ideology) and their own personal reputations in the society. For these reasons, SSB size is expected to influence the performance of IFIs. Again referring to the Islamic concept of Shura, IFIs do not require a large SSB size; however, a standard

[36]Ahmed (2011) contended that the SSB did not have any executive role; however, the prime obligation of SSB is the advisory role.

SSB should not be less than three permanent members. Therefore, the next hypothesis is:

> Hypothesis 2d: *There is a significant relationship between SSB-size and the performance of IFIs based on ROA and Tobin's Q.*

5.2.2.5 Audit committee size (ACS)

The accounting literature emphasized the importance of auditing regimes in enhancing internal corporate control by reducing information asymmetries between management and shareholders (Healy and Palepu, 2001; Adams and Ferreira, 2007). A major function of the audit committee is to establish and maintain high quality financial reporting process of the firm (Chen and Zhou, 2007); this mitigates the agency problems related to under-investment i.e. tendency to pass positive NPV projects, over-investments i.e. tendency to invest in negative NPV projects or both (Biddle et al. 2009). Chen and Chen (2012) found firms with strong audit committees made more efficient capital allocation decisions and enjoyed a high access value. Research suggests that a larger audit committee is more likely to enhance its status and power within an organization, and demand higher audit quality (Kalbers and Fogarty, 1993). Furthermore, Pincus et al. (1990) suggested that larger audit committees would be more likely to discover potential problems through an increase in resources which would enable them to help improve the quality of its oversight. Taking all the arguments into account, this study tested the following hypothesis that large audit committee enhanced the audit process. Therefore, the next hypothesis is:

> Hypothesis 2e: *There is a significant positive relationship between audit committee size and the performance of IFIs based on ROA and Tobin's Q.*

5.2.3 Firm specific factors and performance

As knowledge creation, diffusion, and storage are inherently evolutionary in nature, the degree to which an organization develops its IC may vary across the sample. Extant literature (Bashir, 1999; Bader et al., 2008; Majid et al., 2010; Čihák and Hesse, 2010) examined the performance efficiency of IFIs whereas some of those studies made, also, a comparison between Islamic and conventional financial institutions. Controlling for

internal factors, such as bank size, leverage, bank age, and environmental factors, such as country macroeconomic conditions, type of bank and accessibility of banking services, operating region, financial regulations etc., highlight a number of significant differences in business orientation.

Accordingly, as suggested by the extant literature (Daily and Dalton, 1994; Segars and Grover, 1995; Young et al., 2000; Haniffa and Hudaib, 2006; Chen and Li, 2013; Kadous et al., 2013), this study used a number of firm-specific variables. As control variables, the standard proxies, used to measure the control factors in this study, are defined formally below.

5.2.3.1 Firm-size

Bashir (1999) was among the pioneer studies which examined analytically and empirically the implications of the bank's scale (total assets) on profitability and risk measures of two Islamic banks based in Sudan. The study found a significant relationship between size and profitability measures i.e. ROA and ROE, suggesting that Islamic banks became more profitable as they grew in size. Likewise, Majid et al. (2010) investigated the efficiency of Islamic and conventional banks and suggested that Islamic banking might benefit from increased scale. However, Čihák and Hesse (2010) posited that small Islamic banks outperformed small conventional and large Islamic banks. Firm size is expected to be related positively to both accounting performance of IFIs based on ROA and market performance of IFIs based on Tobin's Q. The next research hypothesis is:

> Hypothesis 3a: *There is a significant positive relationship between firm size and the performance of IFIs based on ROA and Tobin's Q.*

5.2.3.2 Firm complexity

Structural complexity is yet another potential factors related to firm-related characteristics; this was suggested as being significant in explaining the impact of IC on a firm's performance (Hsu and Wang, 2012). The total number of existing subsidiaries (SUB) is used as a proxy measure for firm complexity. Courtis (1979) and Haniffa and Cooke (2002) submitted that firm complexity required a firm to have an

effective Management Information System (MIS) for monitoring purposes and the availability of such a system helped to reduce the cost of information production per unit. Thus, firms with a greater number of subsidiaries are more complex and, ultimately, need higher internal control and greater in-house capabilities (Zaman et al., 2011). Accordingly, the next hypothesis is:

> Hypothesis 3b: *There is a significant positive relationship between structural complexity of business and the performance of IFIs based on ROA and Tobin's Q*

5.2.3.3 Level of risk

Level of risk or leverage, which is another control variable, is employed as a proxy of a firm's capital structure that is likely to affect firm performance. Geringer et al. (2000) found the level of risk to be related significantly to the firm's performance. According to Smith and Warner (1979), leverage reflects a firm's financial risk; this may limit the firm's available economic resources to support long-term intangible investment. Level of risk, using leverage as a proxy, is another firm-related control variable used in this study. Firms with higher leverage require careful monitoring to protect themselves from business and financial risk and, as such, are related negatively to both accounting and market based performance measures. Accordingly, the next hypothesis is as follows:

> Hypothesis 3c: *There is a significant negative relationship between leverage and the financial performance of IFIs based on ROA and Tobin's Q.*

5.2.3.4 Listing status

Listed firms are more visible and tend to attract the market's attention. The literature suggests that listing status is a significant factor in explaining strategic information disclosures (Firth, 1979; Cooke, 1992). Moreover, listed firms are more likely to meet the needs of capital markets in obtaining funds on favourable terms (Gray et al., 1995). Likewise, Yudistira (2004) posited that listing status had a positive impact on the efficiency of Islamic banks. An increasing demand for Islamic bonds has been witnessed in recent years. This calls upon the IFIs to become listed in order to attract more investors and be more visible to the market. A review of the Islamic financial market revealed that the absolute number of listed IFIs increased during recent years.

Such a trend may be attributed to the increased demand for Shariah compliance products. Therefore, it was important to examine the effect of listing status on the performance of IFIs. Listed IFIs can attract more investment. Equally, listing status enhances the confidence level of investors. Hence, the next hypothesis is as follows:

Hypothesis 3d: *There is a significant positive relationship between listing status the performance of IFIs based on ROA and Tobin's Q.*

5.2.3.5 Type of auditor (BIG4)

It is suggested that firms with internal control problems are less likely to hire a BIG4 auditor because they might be financially constrained and consider a BIG4 firm to be too expensive. Equally, the BIG4 auditors might avoid such firms because they are perceived to be risky and might expose the BIG4 to potential litigation.

Kadous et al. (2013) were of the view that non-specialists (non-Big4) auditors, relied on a trust heuristic in assessing and weighting a firm. Furthermore, the authors argued that the non-specialists appeared to substitute trust in a stronger social bonds for an objective assessment. In turn, the firm was weighted heavily due to the stronger social bond, even when it was poorly justified. Such trust heuristic is troublesome because it implies that social bonds inhibit the objective processing of new information. This is because the specialists (the Big4) do not engage in a trust heuristic and are less prone to the trust heuristic. Islamic finance is based on trust among the parties involved in Shariah-compliance business and advocates strong social bonds while the specialist auditors do not seem to put weight on such values. Therefore, it is worth testing if the choice of auditor has an impact on the performance of an IFI.

Recent studies suggested that high-quality auditing enhanced a firm's value in the market. For instance, Chen and Li (2013) tested a sample of 376 largest Canadian firms listed on the TSX Venture Exchange during 2003–2004 and posited that high-quality audit reduced the likelihood of managerial asset diversion and enhanced firm value. Furthermore, the study suggested that compliance with the stringent auditing policy had a significantly positive impact on a firm's market performance based on Tobin's Q and investment efficiency and a significantly negative impact on a firm's cost of equity capital. As described above, BIG4 enhances the market confidence. Accordingly, the study tested the following hypothesis:

Hypothesis 3e: *There is a significant positive relationship between type of auditor and the performance of IFIs based on ROA and Tobin's Q*

5.2.3.6 Operating region

Islamic finance is a global phenomenon and not subject only to Muslim dominated regions. Consequently, IFIs operate in a global context and are present in more than one hundred countries worldwide. As investments in firms IC and performance outcomes may differ systematically across geographical locations, it is imperative to control for operating region in order to identify the differences between geographical proximity and similarities in terms of cultural background.

This research includes 64 IFIs based in ten different countries worldwide. The sample countries range from high to relatively low income economies and significant differences exist in many characteristics including those related to social structure, economics, politics, and geography (Majid et al., 2010). Therefore, for instance, countries, such as Bangladesh and Pakistan, are plagued by the effects of political unrest; this results in high outflows of capital and low inflow of FDI as the investors' confidence is shaken. In contrast, due to its high level of economic development and its comprehensive regulatory framework, countries, such as Bahrain and United Arab Emirates (UAE) attracted confidence among investors (Iqbal and Molyneux, 2005). Additionally, Bonin et al. (2005) submitted that country-specific factors played a significant role in explaining the differences in firm performance. Besides such specific country differences, significant differences in financial reporting standards and bank regulatory frameworks (Karim 2001) suggest strongly that appropriate controlling for the operating region would have an important impact on the performance of the samples IFIs. Accordingly, the hypothesis, tested here, is as follows:

Hypothesis 3f: *There is a significant positive relationship between operating region and the performance of IFIs based on ROA and Tobin's Q.*

5.2.4 Research Models

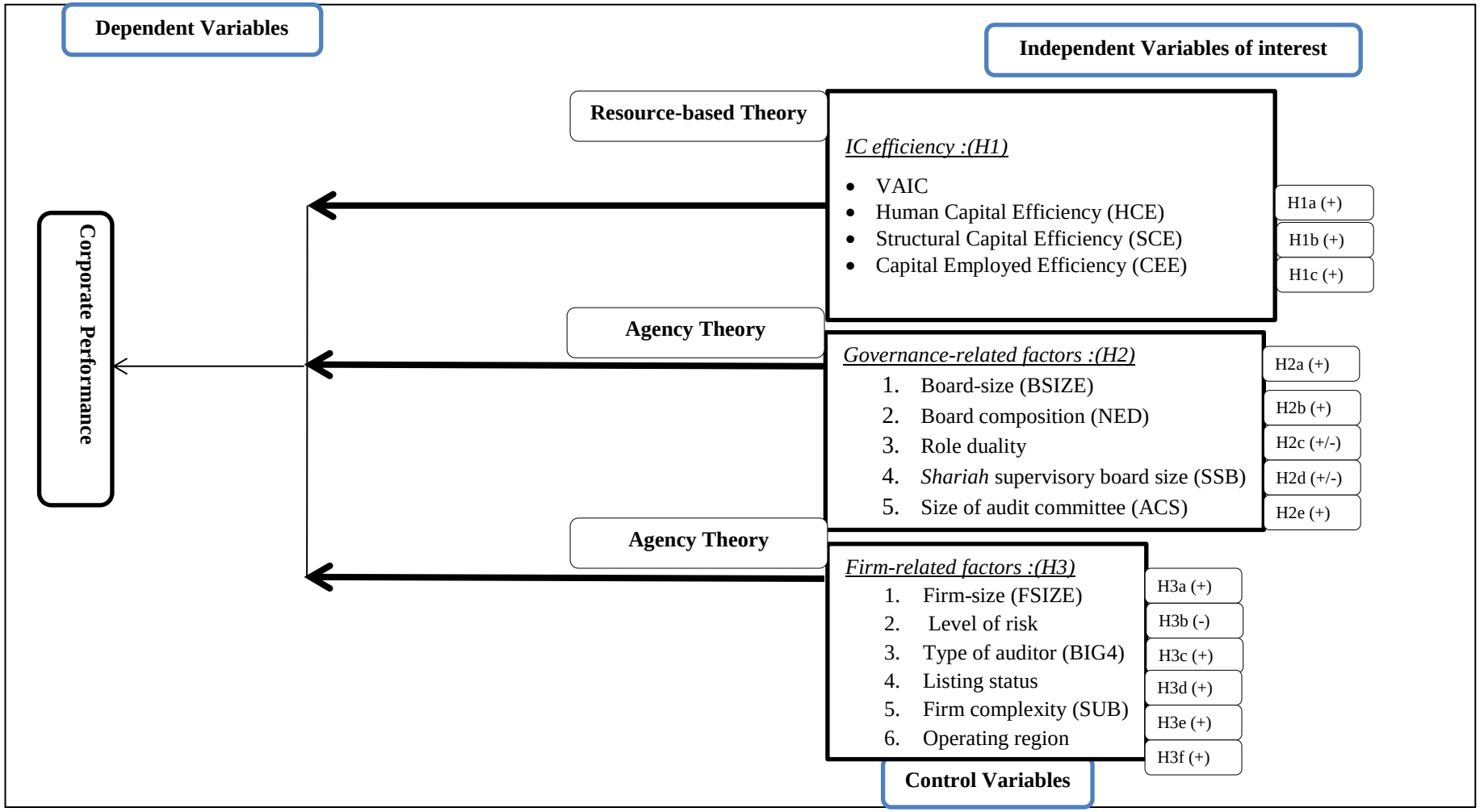
The research models were developed based on an in-depth review of the literature including the relevant theories. As stated in Chapter 1, the main purpose of this study

was to investigate the effects of IC efficiency and CG characteristics on IFIs' performance, while controlling for firm-specific characteristics during the period 2007 to 2011. Referring to Figure 4.1, IC efficiency was this study's variable of interest which might affect IFIs' performance. According to resource-based theory, firms, which utilize their IC resources efficiently, are able to enhance their economic performance by gaining competitive advantages. Since VAIC refers to the overall IC efficiency and is comprised of the three components, this study considers not only the overall IC efficiency but, also, each component's efficiency in affecting economic performance. Hence, the IC independent variables consist of VAIC, HCE, SCE and CCE.

Corporate governance characteristics was this study's second variable of interest which might affect the IFIs' economic performance. Agency models imply generally that managers and shareholders tend to have divergent interests and, as a result when monitoring is lax, managers may pursue corporate strategies which are not in the best interests of shareholders. This is because Islamic finance (in theory) is based on trust and requires relatively less monitoring than conventional financial institutions. Therefore, consistent with this study's primary objective, there was an examination of the impact of CG features i.e. board-size, board composition, leadership structure, size of Shariah supervisory board and size of audit committee on the IFIs' performance. As suggested by the agency theory, firm related factors were this study's third variable of interest which might affect IFIs' performance. Agency theory suggests that firm performance can be affected by the internal factors such as firm size, level of risk, firm complexity as well external factors such as operating region. Performance is assessed based on two distinguish measures: ROA (accounting performance); and Tobin's Q (market performance).

Figure 4.1

Research Framework 1



5.2.5 Impact of IC and corporate governance on the performance of IFIs pre and post financial crisis

An overall slowdown in the financial markets around the globe was observed during the recent global financial crisis. The crisis shook, also, the foundations of the centuries old financial system and shed doubts on the proper functioning of the conventional banking system. There were calls for radical changes to the existing financial system. While radical transformation may threaten the profitability and survival of existing incumbent conventional financial institutions, it may bring, also, a cohort of new opportunities and powerful new players into the market such as the Islamic financial institutions (IFIs).

The superior performance of the Islamic finance industry during the global financial crisis attracted increased attention on the Islamic way of banking. Academics and policy makers alike pointed to the advantages of the Islamic way of banking and how it helped contain the adverse impact on profitability during the crisis. Hasan and Dridi (2010) observed that the credit and asset growth of Islamic finance were at least twice as high as that of conventional banks during the global financial crisis. Furthermore, Hasan and Dridi (2010, p. 33) stressed that "While conventional intermediation is largely debt-based and allows for risk transfer, Islamic intermediation, in contrast, is asset-based, and centres on risk sharing. In addition to providing Islamic banks with additional buffers, these features make their activities more closely related to the real economy and tend to reduce their contribution to excesses and bubbles."

In a recent study, while controlling simultaneously for time-variant country-fixed effects, Beck et al. (2013) documented significant differences in business orientation while comparing the efficiency and stability of the traditional model of financial intermediation (conventional banking model) and the Shariah-compliant business model (Islamic banking model),. The study found that IFIs were better capitalized; had higher asset quality and higher equity-asset ratios; and were less likely to disintermediate especially during crises. This might explain why they are less subject to disintermediation and deleveraging as often observed in conventional financial institutions. Furthermore, the study posited that such higher capitalization and better asset quality had helped IFIs to outperform their conventional counterparts during financial distress.

Corporate governance is yet another potential factor which plays a significant role during an unseen crisis. For instance, Mitton (2002) measured the impact of corporate governance on the East Asian financial crisis (1997-1998), using a sample of 398 firms from Indonesia, Korea, Malaysia, the Philippines, and Thailand. The study suggested that stronger corporate governance was an important factor, especially during an unexpected period of extreme economic distress. Baek et al. (2004) measured the impact of corporate governance on firm value during the 1997 Korean financial crisis. The study found that firm value was related to several key indicators of corporate governance and suggested that differences in governance practice at the firm level played a significant role in determining its value during a crisis.

Shariah-compliant business is regarded as one of the fastest growing segments in the global financial services. Islamic finance has become systemically important in many markets and too big to be ignored. Literature shows that Islamic banking and finance grew at the rate of 15-20 per cent during the last decade (Schoon 2010) and the total assets held by the IFIs doubled to US$ 2 trillion during the same period (Beck et al., 2013; Ernst and Young, 2013). At present, there are 400 IFIs spread over 100 countries worldwide, covering most of the Muslim world and various market niches in the West (Ernst and Young, 2011; Nawaz 2013b). Islamic finance is expected to enjoy the same trends in the upcoming years. Although the financial assets still constitute only a fraction of total global banking assets (1.5%), the importance of the Islamic way of banking has been increasing rapidly.

While the financial crisis gave Islamic finance an opportunity to prove its resilience, it highlighted, also, the need to address important challenges facing the Islamic finance industry. In order to sustain the current robust growth, IFIs need to come up with new products in order to fulfil the increasing needs of their clients; these are more diversified than before. Such product innovation requires higher intangible resources, especially human intellectual capital (people with the knowledge of Shariah and economic qualification). Equally, sophisticated structural capital is needed to execute the innovative ideas and convert them into tangible products. At the same time, IFIs are constrained by the Shariah-code not to raise capital from illegitimate sources. Therefore, IC resources are significantly important for IFIs.

In summary, the empirical evidence posited for the sound financial health of the Islamic finance industry. There was a reported upward trend in the growth of total assets

held by the IFIs (Hasan and Dridi, 2010; Beck et al., 2013). This implies that trust in the Islamic finance industry remained unshaken during the financial turmoil; this resulted in higher fractions of financial capital (capital employed) flowing into the Islamic banking system. As a result, during the financial crisis, IFIs outperformed their conventional rivals by producing higher financial returns (Parashar and Venkatesh, 2010). Equally, the significance of effective corporate governance mechanism and corporate performance, particularly during the financial turbulence, were documented, also (Mitton, 2002; Baek et al., 2004). Several key indicators of corporate governance are said to be associated with a firm's market value and differences in governance practice at the firm level play a significant role in determining its value during a crisis. In a crux, the efficiency, in utilising the resource base including both physical, and financial and IC, can be regarded as the main factor which can help an IFI to maintain sound financial and market performance during financial distress.

Therefore, the hypothesis to be tested here is that it is anticipated that trust plays a vital role in attracting huge sums of capital for the IFIs during the crisis. Trust in Islamic finance is that all the operations of IFIs are Shariah-compliant in which, ideally, both management (including SSB) and staff (human IC: agent) are well-versed in Shariah knowledge along with the knowledge of contemporary economics. Therefore, IFIs used the raised capital in an efficient (using technological resources: structural IC) manner to produce higher financial returns and market value and, hence, they remained stable during the financial crisis. The hypothesis is in line with agency theory by anticipating the role of IFIs as agents and is line, also, with resource-based view by determining the role of IC as a crucial asset in attaining and maintaining superior performance.

However, the studies, conducted in the area, were concerned about the tangible aspects and ignored the intangible aspects; these are arguably the main performance drivers for IFIs. The financial performance of IFIs was stable during the crisis; however, no evidence is available on the IC and CG performance of IFIs. Therefore, it was important to analyse which IC i.e. human IC, structural IC and financial capital played a crucial role in helping IFIs to maintain superior performance during the recent financial distress. The analysis would help, also, to identify the areas that needed further improvement. Therefore the hypothesis to be tested here is:

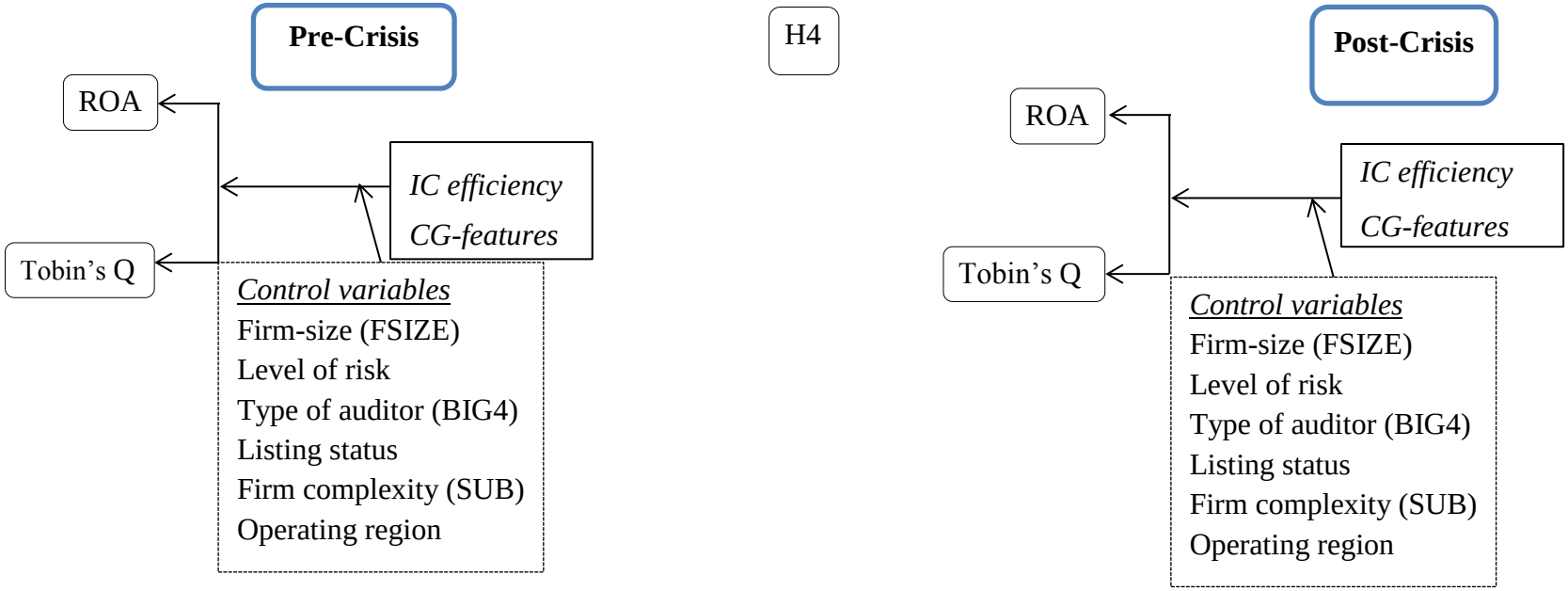
Hypothesis 4: To what extent do IC and CG affect performance during the financial crisis?

This research's secondary objective was to compare the IC and CG performance of IFIs before and after the global financial crisis. This study extended over a five year period i.e. 2007-2011. The recent financial crisis was triggered in 2007; however, it is imperative to include the data from 2008 as well since this can offer a better understanding of the effects of the crisis on the performance of IFIs. Therefore, years 2007 and 2008 were regarded as the pre-crisis period. 2009 was regarded as the time of market adjustments whereas the signs of recovery can be witnessed by the end of the study period. Accordingly, years 2010 and 2011 are said to be the recovery years of the post-crisis period. The research framework 2 (see research framework 2) was used to examine the effects of IC and CG features on the performance of IFIs before and after the crisis. Research framework 2 is identical to the main research framework i.e. framework 1, with the exception of controlling for the time period being the pre-crisis (2007-2008) and the post-crisis (2010-2011).

Figure 4.2

Research Framework 2

Impact of IC and corporate governance on performance of IFIs pre- and post-financial crisis



5.2.6 Comparative analysis of Islamic finance industry

The basic assumption, underlying the conventional banking theories, was that banks accepted deposits at a lower interest rate and resold those deposited funds to those seeking funds for economic activities at a higher interest rate. Therefore, the banks earned profit based on their competitive advantage at gathering information and underwriting risk (Santos, 2001). Hence, in conventional banking system, profits were driven mainly by the spread between the interest rates i.e. the interest rate received from the capital borrowers and the interest rate paid to depositors. Here, the contention was that IFIs performed the same intermediary function with the exception of a predetermined interest rate. In other words, IFIs did not receive or pay a predetermined or prefix interest rate. Instead, profits were earned through investments in different projects and shared on the basis of agreements between the depositors and the borrowers.

Given the robust growth of the Islamic finance industry, many leading conventional banking groups i.e. Citibank, HSBC, and Standard Chartered bank etc. made their way to the Islamic way of banking. As a consequence, the number of financial institutions, offering Shariah-compliant products, increased causing competition within the Islamic finance industry. Correspondingly, many empirical studies examined the efficiency of conventional and Islamic banks and documented that IFIs were more efficient than their conventional counterparts. Nonetheless, the evidence in this regard remained inconclusive.

Most of the available studies used the traditional financial ratios such as ROA and ROE to assess the performance of banks be they conventional or Islamic. These financial ratios were used, also, by some of those studies to compare the performance between the two sets of banking. Additionally, the studies controlled, also, for macroeconomic factors i.e. GDP growth, operating region and firm-specific characteristics i.e. size and age.

Borrowing from Agency and Intermediation theories, Bashir (1999) examined analytically and empirically the implications of the bank's scale (total assets) on the profitability and the risk measures of two Islamic banks based in Sudan. The study found a significant relationship between size and profitability measures i.e. ROA and ROE suggesting that the Islamic banks became more profitable as they grew in size.

Whilst Bashir's study remained country specific, other studies were conducted in a cross-country manner. Hassan and Bashir (2003) analysed the impact of bank characteristics and the overall financial environment on the performance of Islamic banks operating in 21 countries worldwide for the period 1994-2001. The results revealed that the profitability measures of Islamic banks responded positively to the increase in capital and responded negatively to loan ratios. Likewise, Yudistira (2004) analysed the stability and efficiency of eighteen Islamic banks for the period 1997-2000 and reported that the selected Islamic banks remained efficient in creating value during the study period. The study found, also, that unlisted banks were based in regions other than the Middle East and comparatively were more efficient. However, the study did not compare these results to those conventional banks competing in the same markets.

On the other hand, there was substantial empirical evidence on the performance differences between the two sets of banking i.e. conventional and Islamic financial institutions. Hussein (2004) estimated the profit efficiency index and reported no significant differences in the profit efficiencies of Islamic and conventional banks operating in Bahrain. Likewise, Bader et al. (2008) measured and compared the cost, revenue and profit efficiency of 43 Islamic and 37 conventional banks based in 21 countries worldwide. Similar to Hussein (2004), the study found no significant differences in the overall efficiency of results between Islamic and conventional banks. In the most recent study, Beck et al. (2013) analysed empirically the differences in business orientation, efficiency, asset quality, and stability of 422 conventional and 88 Islamic financial institutions across a sample of 22 countries for the period 1995-2009. The anecdotal evidence suggested no significant differences between the business models of conventional and Islamic banks.

Some studies reported otherwise. Majid et al. (2010) investigated the efficiency of 23 Islamic and 88 conventional banks based in 10 different countries for the period 1996-2002 and reported differences in the efficiencies in the Islamic banks operating in different geographical locations. In a cross-county analysis of Islamic financial institutions, Čihák and Hesse (2010) measured the financial stability of Islamic banks operating in nineteen different banking systems for the period 1993-2004. The sample included 77 Islamic and 397 conventional banks. Using Z-scores as a measure of stability, the study revealed that small Islamic banks were financially more stable than small commercial banks. Also, large commercial banks were financially more stable

than large Islamic banks while small Islamic banks were financially more stable than large Islamic banks. Abedifar et al. (2012) confirmed these findings for small Islamic banks in a sample of countries with both Islamic and conventional banks.

In summary, when comparing the efficiency of Islamic and conventional financial institutions while controlling for time-variant country-fixed effects, the existing literature highlighted a number of significant differences in business orientation. However, a substantial body of empirical evidence suggests that IFIs are less cost-effective. However, they have a higher intermediation and financial ratios; higher asset quality; and are better capitalized. Furthermore, the literature suggests, also, a large cross-country variation in the differences between conventional and Islamic financial institutions and across IFIs of different sizes. However, there is a dearth of research which takes into consideration the impact of IC and CG while comparing the performance of banks being conventional or Islamic.

CG are very important factors in determining firms performance, particularly, for IFIs which came into being for the betterment of the society as a whole and not in the pursuit of financial profit alone. Moreover, IFIs' governing boards of are entrusted by the stakeholders to serve their interests and not follow their personal deeds. Therefore, it is imperative to measure the effects of both IC and CG-features on the performance of IFIs; however, there exists no study as such to date. Another interesting element, which is missing in earlier studies and particularly those concerning IFIs, is that none of these studies have considered so far the heterogeneity of the Islamic finance industry. This study addresses this omission from the literature by 1) analysing the homogeneity of the Islamic finance industry; and 2) comparing the impact of IC and CG on the performance of FFIBs and Windows.

It was argued that the Islamic finance industry was not homogeneous since not all the IFIs were FFIBs. Some IFIs operated as Windows[37]. FFIB refers to a full service intermediary financial institution that conducts its business in accordance with the Shariah and, as such, does not deal simultaneously in conventional banking business.

[37]Citi-Islamic, HSBC-Amanah, and Standard Chartered-Saadiq are some of the prominent examples of *Windows*; these are wholly owned subsidiaries of Citi Group, HSBC and Standard Charted Bank respectively.

Windows are all those extended hands of various conventional banking groups which offer Islamic finance services alongside conventional banking as their core business.

The Islamic business model of banking is based on Shariah; this guides Islamic economics while the traditional conventional banking model is based on a different ideology and pursues different goals i.e. profit maximization. Simply stated, FFIBs came into being to offer Shariah-compliant solutions to those looking for investment opportunities while not violating their religious beliefs. The prominent conventional banking groups came into this business through their extended hands i.e. Shariah-windows after realizing the fact that they were about to lose their clients in certain regions, such as the Gulf, where these conventional banks had a track record of providing banking services from over a century, way before the birth of Islamic banking (Wilson, 2007; IDB, 2007; Warde, 2010).

Moreover, the governance mechanism of both sets of banking differs, also, in its nature and purpose. Islamic finance is based on trust and requires less monitoring as compared to the Windows which follows the same westernized corporate governance model. Additionally, from an Islamic standpoint, governance is to achieve social equality and create more value for the society at large, while the conventional governance model focuses on wealth maximization for shareholders.

Borrowing from the agency theory of the firm, it is argued that the conventional banking model is based on the central assumption of self-interests of individuals who tend to maximize their own returns by all means available to the firm and which might result in conflicts between both parties, known as the agency problem (Eisenhardt, 1989; Baiman, 1990; Kunz and Pfaff, 2002). On the other hand, FFIBs are not expected to suffer to the same extent due the trust factors among the parties involved in business. In summary, the operating mechanisms of the conventional and Islamic banking systems are entirely different. The IC stock, including human capital, structural capital and capital employed, is, also, somewhat different in nature for both sets of banking as are the governance mechanisms.

Taken the significance of the arguments together, both sets of banking are expected to utilize their resource base i.e. IC, physical, and financial resources differently and are governed differently. Hence, as a consequence they achieve different levels of performance. Hence, the hypothesis, to be tested here, is that there exist

significant differences in the IC and CG performance of both sets of banking i.e. FFIB and Windows. The hypothesis is as follows:

> *Hypothesis 5: There is a significant difference in the effect of IC and CG on the performance of FFIBs and Shariah Windows.*

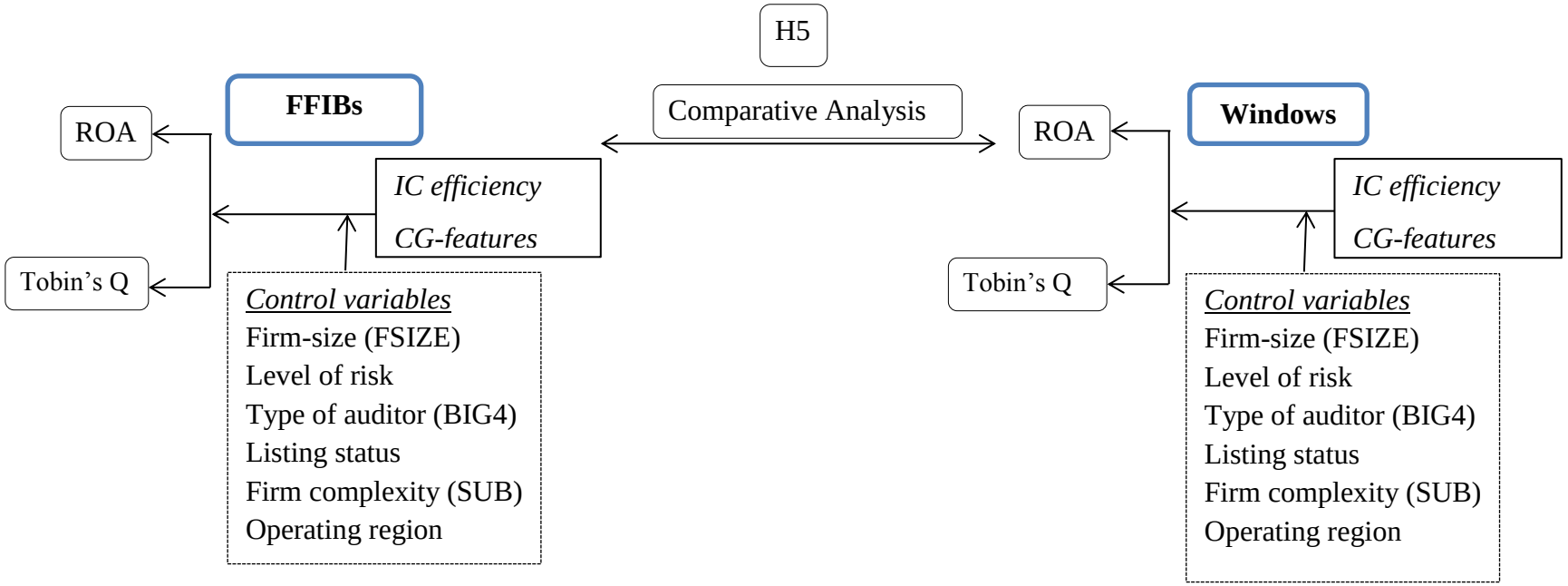
This research's third objective is to compare the IC and CG performance of FFIBs against the Windows.

It is established that, as such, the Islamic finance industry is not homogenous because not all of this study's sample of IFIs in this study are FFIBs. Since the business orientations of the selected IFIs were different, their performance ought to be different too. Therefore, the selected IFIs were divided into two groups: 1) fully-fledged Islamic banks and 2) Shariah-windows. The total number of IFIs, included in this study is 64 of which 37 are classified as FFIBs while the remaining 27 are sorted as Shariah-windows. The research framework is similar to the framework for the second research objective (See research framework 3) used to determine the performance differences between two sets of banking and is, also, the replication of framework 1, with the exception of controlling for bank type being FFIBs or Shariah windows. The sets of variables, used in all the research models, are unchanged.

Figure 4.3

Research Framework 3

Comparative analysis of Islamic finance Industry (FFIBs *vs*. Windows)



5.3 Chapter summary

This chapter described the theoretical framework and presented, also, the main sets of research hypotheses to be tested. The first set of hypothesis related to the effects of IC, CG and firm-specific characteristics on the performance of IFIs in achieving the first research objective. The second set of research hypothesis related to the effects of IC, CG and firm-specific characteristics on IFIs' performance before and after the financial crisis, thus, addressing the second research objective. Finally, the third set of research hypothesis related to the effects of IC, CG and firm-specific characteristics on performance of FFIBs and Windows; this addressed the third research objective.

IC is a strategic asset which can lead to a firm's higher performance and sustaining a competitive advantage. Resource-based view (RBV) of the firm explicitly recognizes the importance of intangibles such as customer orientation and organizational knowledge. It offers a significant opportunity to explore these theoretical complementarities through examining the relationship between IC resources and the performance of IFIs. Equally, sub-components of IC *viz*. human capital and structural capital are perceived to be potential strategic assets under RBV. Hence the resource-based view of the firm relates closely to IC and, therefore, RBV is used as an economic foundation to examine IC's role in helping IFIs obtain competitive advantage.

From a conventional standpoint, agency theory is based on the central assumption of self-interests of individuals. It argues that both the principal and the agent tend to maximize their own returns by all means; this might result in conflicts between both parties (known as the agency problem). In contrast, the Islamic banking is based on trust and agents are entrusted by the principals to perform their obligations in an ethically correct way. Hence, agency theory is adopted to test the research hypotheses related to the corporate governance of IFIs.

Agency theory tenants posit, also, that firm performance can be affected by the internal factors such as firm size and external factors such as operating region. Accordingly, using agency theory, this study examined the effect of firm-related variables (i.e. firm-size, level of risk, firm complexity, listing status, type of auditor and operating region) on the performance of IFIs.

This chapter discussed, also, the proposed research model to test the extended research hypotheses and to answer the research questions this chapter. Performance was

assessed based on both the accounting performance measure, proxied by return on assets (ROA), and market performance measure based on Tobin's Q. Since the theoretical bases were set and the research model was developed to test these extended research hypotheses, the next step was to design the research methodology. This is discussed in the next Chapter (Chapter 5).

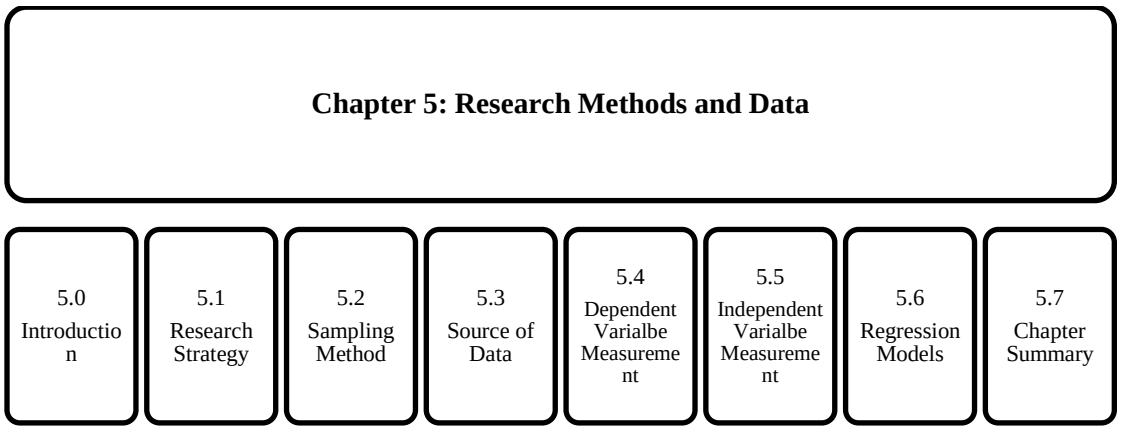
Chapter 6: Research Methods and Data

5.0 Introduction

Research is a multi-stage process. This includes choosing a topic; identifying the research gap through the literature review; defining the research objective supplemented by research questions; designing research methodology; and developing research instruments for data collection and data analysis. All these stages are necessary, however, they may follow different sequence depending on the individual researcher.

Scholars divided research into three different types, namely, explanatory, descriptive and exploratory subject to the nature of information required by the researcher (Saunders et al., 2011; Tull, 1990; Yin, 2009). It is appropriate to use an exploratory study when the situation at hand is not well known and when the literature does not offer much evidence on the subject matter (Sekaran and Bougie, 2011). Furthermore, Sekaran and Bougie (2011) opined that an exploratory study was required in order to establish a viable theoretical framework about an existing phenomenon.

Although the importance of IC in pursuing performance is known, the specific means through which IC influences corporate performance and the empirical evidence on IC's actual contribution to the dynamics of the value creation process remain under research in the Islamic banking and finance sector. As far as the researcher is aware, there are no studies which examined the effects of IC and CG-features on the performance of IFIs and, as such, this study may be considered to be exploratory to fill the gap in the literature.



This chapter describes the research method adopted in this study; the research design relating to the collection of data; the source of data; and method of analysis. The chapter is organized as follows. Section 5.1 explains this study's research strategy. Sections 5.2 and 5.3 explain the sampling method and sources of the data respectively. Sections 5.4 and 5.5 describe the proxies and measurement of the dependent and independent variables respectively. Section 5.6 describes the procedures in analysing the panel data for regression models and the final section provides the chapter summary.

6.1 Research Strategy

According to Bryman and Bell (2011), there exist two philosophical paradigms i.e. positivist (quantitative) and interpretivist (qualitative). The former is an epistemological position which favours the application of natural science methods for the study of social reality. It relies mainly on numerical data and statistical tools, and tests to draw precise inferences and dig out perfect truth (Malhotra, 2008; Neuman, 2005). Quantitative research exhibits the relationship between theory and research as a deduction process; entails the collection of numerical data; follows a positivist approach; and holds an objectivist's conception of social reality. In contrast, the latter focuses on the interpretations, perceptions and perspectives held by the social actors (Bryman and Bell, 2011). Qualitative research deals with subjectivity, interpretations, explanations, meanings and understandings of social actors in their context. The most commonly used research tools for qualitative research are questionnaires, interviews and observations (Creswell, 2013). According to Bryman and Bell (2011), qualitative research methods were used first in social sciences to study social and cultural aspects by using action research, case studies and ethnography. Following Bryman and Bell (2011) and Sekaran and Bougie (2011), some of the pros and cons of qualitative and quantitative research approaches are summarized in Table 5.1 below.

Table 5.1

Qualitative vs. Quantitative research approach

	Qualitative Approach	**Quantitative Approach**
Strengths	• Dynamic and flexible and thus allowing more freedom to researcher • Provides in-depth understanding of the research topic • Provides intellectual creativity to flourish • Generates rich and in-depth data base • Enables the researcher to establish rapport with potential participants and therefore gain their cooperation and historical information	• Cost effective ○ Low cost of data collection ○ Low cost of data processing • Easy to access the respondents based in different geographical locations • Easy to replicate ○ Replication of research as whole ○ Use of research instruments with fever alterations
Critics	• Qualitative research is too subjective • Difficult to replicate due to unstructured approach of research • Less transparent and reliable due to interactive or participatory nature of research	• Widespread decline in response rate in survey research • Consequent biases • Collects a much narrower superficial dataset • Numerical descriptions put limit on results hence, quantitative research provides less elaborate accounts of human perception

Since the main objective of this research was to examine the impact of IC and its sub-components as well as corporate governance variables on performance of IFIs, this research adopted a quantitative research approach.

6.2 Sampling Method

This study's population was IFIs, both fully-fledged Islamic banks and Shariah-windows. The selected sample of IFIs was based on the Bankscope database which has a unique collection of micro-level banking information for different countries and is widely used for international studies and policymaking (Demirgüç-Kunt and Detragiache, 1998). Initially, there was a total of 157 IFIs, identified as "*Islamic Banks*" in the Bankscope database and representing 21 countries worldwide.

Given this study's longitudinal objective, the time period, established for the survey of annual financial data, was set between 2007 and 2011. There were three basic reasons to support the selection of this time period. Firstly, a new generation of Islamic finance, which was more innovative and diverse, emerged during the first decade of 21st century as the doctrine was undergoing a new aggiornamento. This was driven mainly by factors such as globalization of economies, dramatic changes in political-economic environment and Islamic insurgence (Kettell, 2011; Nawaz, 2013a; Nawaz, 2013b). Secondly, Islamic finance documented its stability during the recent global financial

crisis (Hasan and Dridi, 2010; Baele et al., 2011; Beck et al., 2013) and the Islamic finance industry was expected to enjoy the same trends in the upcoming years (Schoon, 2010; Ernst and Young, 2011). Lastly, the West realized, also, the potential of the Islamic way of banking during this period. For example, the UK regulator, the Financial Services Authority (FSA), granted five banking licenses for the Islamic retail and investment banks between 2004 and 2008 (Kay, 2004; Wilson, 2005; Nawaz, 2013a). All such factors contributed equally in making the Islamic financial industry a fertile ground for potential research. Hence, the significance of the study was justified.

Since the study required panel data for 5 years from 2007 to 2011, the database was filtered for data availability. Several filters were applied before arriving at the final sample used in this study.

Filter 1: Bank (Existence) Verification

All identified 157 Islamic banks were accessed individually through their website address provided in the Bankscope database in order to verify if the said banks were still active. Where the website address was not provided in the Bankscope database, the bank was contacted via direct telephone (where possible), email correspondence and by using, also, different means (i.e. central bank's websites and google.com search using name of the bank).

Filter 2: Availability of Required Data

The selected banks were checked individually in order to check the availability of the required data for the years 2007-2011. A total of 93 banks were omitted from the initial sample for the following reasons: required data not available or not accessible; available data did not cover the required time period (2007-2011); or available data was in language other than English (e.g. Arabic, Indo etc.).

Table 5.2

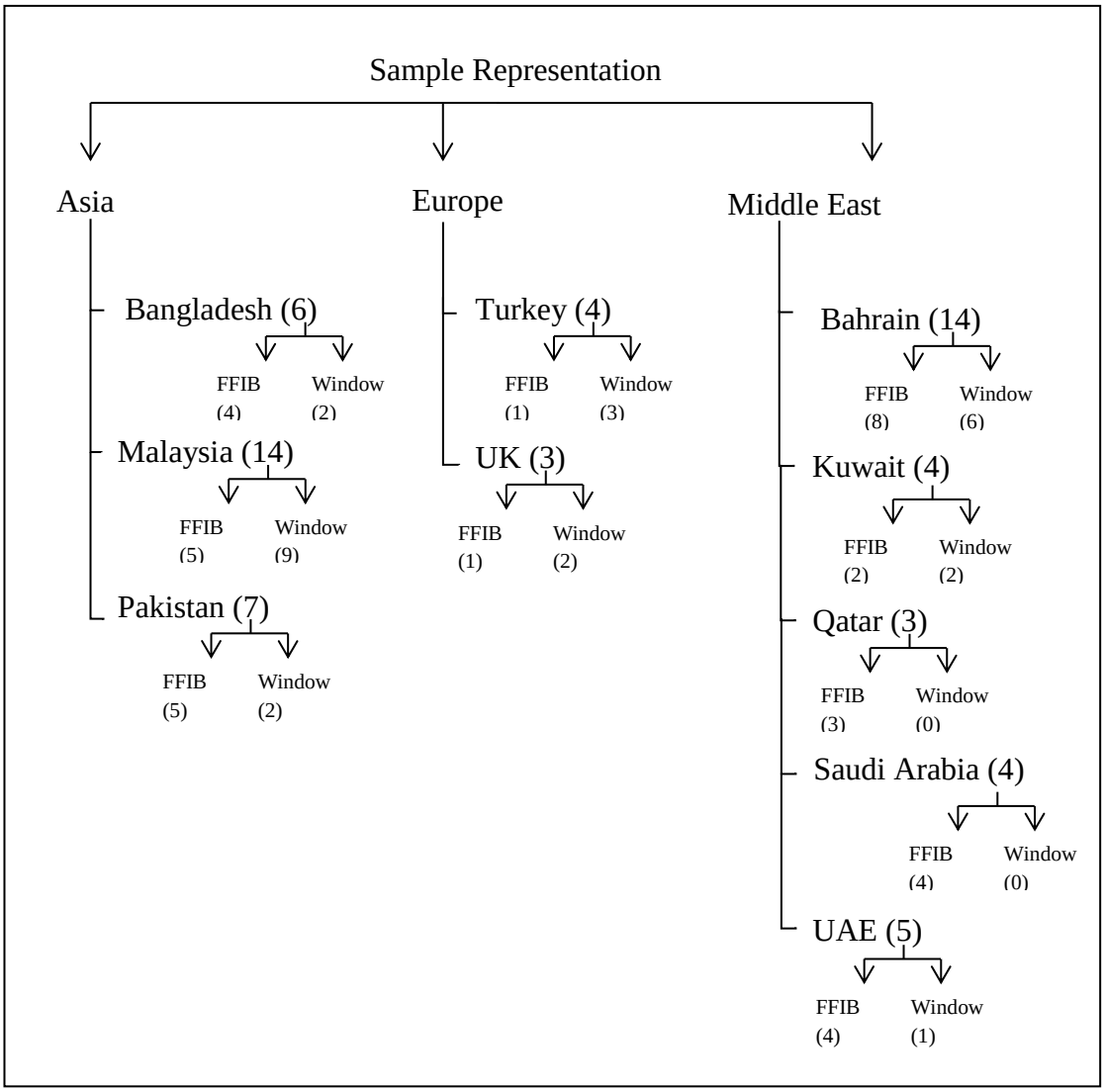
Breakdown of Final Sample

	Asia	Europe	Middle-east	Total
No. of Countries	3	2	5	10
No. of Banks (IFIs)	64			
No. of Firm-years (5 x 64)	320			
Time Window	2007 – 2011			

A final sample of 64 Islamic banks, representing 10 countries, was selected. Table 5.2 presents the breakdown of the selected sample. A total of 64 Islamic banks (37 banks were sorted as fully-fledged Islamic banks and 27 banks were sorted as *Shariah*-Windows) operating in ten different countries was selected as a final sample. The total number of observations (annual reports/financial statements) was 320 for the period of five years (2007-to-2011). Figure 5.1 presents the breakdown of the sample selected for each country in three regions.

Figure 5.1

Selected regions and countries



6.3 Sources of Data

The data, used in this study, was derived mainly from the Bankscope database. Data concerning the governance-specific variables, such as board-size, NED, role duality, SSB, and size of the audit committee was not readily available on the Bankscope database. Therefore, the missing data for these variables along with other missing variables, e.g. type of auditor, was extracted manually from the annual reports of each financial institution. The reason for using a firm's annual reports was that there was considerable support within the accounting disclosure literature of an analysis of

reporting practices solely using annual reports. For instance, Campbell (2000) suggested that annual reports were the most widely distributed of all an organization's publicly produced documents and management had complete editorial control of the discretionary disclosure of information in these documents.

6.4 Measure of Dependent Variables

This study's dependent variable was the performance of IFIs. Performance was operationalized in terms of the monetary values which a firm received in exchange for the price it paid for products or services (Hsu and Wang, 2012). This rationale was supported by the transaction cost theory (Williamson, 1985) which dominated theoretical and empirical research in this area. Hirschey and Wichern (1984) and Venkatraman and Ramanujam (1986) posited that an assessment of an organization's performance ought to include both accounting and market-based measures. Accordingly, this research used two distinct performance measures: ROA; and Tobin's Q.

6.4.1 Measure of Accounting-based Performance

Traditionally, financial-based indices, such as return on assets (ROA) and return of equity (ROE), are employed to measure performance (Usoff et al., 2002). ROA gives an idea as to how efficient management is at using its assets to generate earnings while ROE measures a firm's efficiency at generating profits from every dollar of net assets, and shows how well a company uses investment dollars to generate earnings growth. These traditional accounting based performance measures were criticized for their inadequacy in guiding strategic decisions. In particular, they do not consider the cost of capital incurred to fund the projects which generate these returns and, thus, are severely lacking as instruments to guide managers in their quest for value-creating venues. In addition, they fail often to shed light on the underlying causes for organizations' high or low performance (Bontis, 1998). However, Stewart and Ruckdeschel (1998) argued that financial-performance measures, particularly ROA, were more appropriate in IC studies because they could be used to illustrate the financial value of intangible assets.

Previous studies used various proxies for financial-performance measures including ROA, return on sales, and ROE simultaneously (Lant et al., 1992; Ho and Williams, 2003; Youndt et al., 2004), while others used only a single measure (Ramdani and Witteloostuijn, 2010; Hsu and Wang, 2012; Adams and Santos 2006). Consistent with the latter stream of research, this study used ROA as a proxy for accounting based performance measure of IFIs. Return on equity was ruled out because it was more sensitive to capital structure differences.

6.4.2 Measure of Market-based Performance

In addition to the accounting-based performance measure, the market-based performance measure was considered, also. Market-based performance measures, such as market-to-book value and Tobin's Q, are used widely to reflect the market's assessment of the firm's value.

Market-to-book value approach (or MB ratio) is the most widely known indicator of IC. It is an easy indicator of IC and, also, is adopted generally by public corporations when they state the difference between book value and market value (Edvinsson and Malone, 1997; Roos et al., 1997; Sveiby 1997). The contention is that the value of a firm's IC is represented by the difference between the firm's market value and book value (Dzinkowski, 2000). Market value is defined as a firm's most probable price and it is equal to price per share multiplied by the total numbers of outstanding shares (Chang, 2007) while the book value is the net value of the firm's assets. MB ratio, as a measure of the IFIs' market performance was ruled out due to multicollinearity since the denominator for Tobin's Q and MB ratio was the same i.e. total assets.

Tobin's Q is the ratio of the market value of a firm (number of shares x share price) to the replacement cost of its assets (Chung and Pruitt, 1994). If the former is higher than the latter, the firm is making higher than normal returns on its investment. The strength of this measure is that it addresses a significant weakness in the traditional accounting framework, namely, measuring of assets using historical costs (Stewart and Ruckdeschel, 1998; Chung and Pruitt, 1994; Abeysekera, 2008b). Chung and Pruitt (1994) noted that Tobin's Q was more accurate than the market-to-book method because it used replacement rather than historical costs. Likewise, Dzinkowski (2000)

argued that Tobin's Q was more accurate than the market-to-book method because it used replacement, rather than historical costs[38]. For this reason, and consistent with previous research (Youndt et al., 2004; Haniffa and Hudaib, 2006; Adams and Santos, 2006; Chen and Li 2013), this study uses Tobin's Q as the proxy measure of IFIs' market performance.

6.5 Measure of Independent Variables

6.5.1 Intellectual capital efficiency variables

VAIC^{TM} is an analytical procedure designed to enable management, shareholders and other relevant stakeholders to monitor effectively and evaluate the efficiency of value added by a firm's total resources and each major resource component (Ho and Williams, 2003). Unlike traditional accounting which focuses on controlling costs, the VAIC^{TM} introduces a novel concept of *'corporate intellectual ability*' (Pulic, 2004). It refers to the firm's total value creation efficiency arising from two key resources: 1) intellectual capital which consists of human IC and structural IC; and 2) physical or financial capital (capital employed efficiency).

Formally, VAIC^{TM} is a composite sum of three indicators termed as: (1) Human Capital Efficiency (HCE), an indicator of the efficiency of value added by human capital resources employed; (2) Structural Capital Efficiency (SCE), an indicator of the efficiency of value added by structural capital; and (3) Capital Employed Efficiency (CEE), which indicates how much value is created for every monetary unit invested in financial or physical capital. Algebraically, the VAIC^{TM} relationship is formalized as follows:

$$VAIC^{TM} = HCE + SCE + CEE$$

Where VAIC^{TM} = VA intellectual coefficient; HCE = human capital coefficient; SCE = structural capital coefficient, and CEE = capital employed coefficient.

[38]Dotzel et al. (2013, p. 265) advocated the use of Tobin's Q reasoning that "(1) it is a forward-looking measure because it is based on stock market prices, (2) it captures long-term performance by comparing replacement and market values, and (3) it can be used across industries because accounting conventions do not affect it".

A high coefficient indicates a higher value creation using the firm's resources, including IC. The phases in executing the VAIC™ method are described below.

Step 1: Value added (VA)

Pulic (2004) took Value Added (VA) as the most appropriate indicator for business success. VAIC™ is used to calculate a firm's VA by subtracting input from output, whereby personal expenses are not included in the input. In financial terms, this is equal to:

$$VA = Output - Input \qquad \text{Eq. (1)}$$

Where: VA = Value added, Output[39] = Total income, Input[40] = Total expenses (excluding employee cost)

Step 2: Human Capital Efficiency (HCE)

HCE is calculated by dividing a company's VA by its HC[41] (all the expenditures for employees are embraced in human capital) to indicate in practice the real productivity of the firm's personnel, i.e. how much value the company creates through one monetary unit invested in human resources. HCE is calculated as follows:

$$HCE = VA/HC \qquad \text{Eq. (2)}$$

Step 3: Structural Capital Efficiency (SCE)

Pulic (2004) stated that human capital and structural capital were reciprocal. The lesser human capital participates, the more structural capital is involved (SC = VA – HC). SCE is calculated by dividing a firm's SC by its VA. SCE measures how much capital a company can create through one monetary unit invested in VA, i.e. it measures the productivity or efficiency of VA from structural capital.

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[39] Calculated from the income statement of each bank using Bankscope database, this provides a break-up for income. Hence, output = Gross interest and dividend income (Interest income on loans + other interest income + Dividend income) + Total non-interest operating income (Net insurance income + Net fees and commissions + other operating income).

[40] Calculated from the income statement of each bank using Bankscope database, this provides a break-up for income. Hence, input = Total interest expense (Interest expense on customer deposits + Other interest expense) + Total non-interest expenses (Other operating expenses).

[41] Calculated from the income statement of each bank using Bankscope database, this provides separately, human capital under the heading 'Personal expenses'.

$$SCE = SC/VA \qquad \text{Eq. (3)}$$

Step 4: Capital Employed Efficiency (CEE)

Pulic (2004) stated that IC might not operate independently and needed to function in concert with financial and physical capital in order to create value. Furthermore, in order to receive a full insight into the efficiency of value creating resources, it is necessary to take both financial and physical capital into account. A firm's CEE is obtained by dividing its VA by its CE (where CE = book value of the net assets of company):

$$CEE = VA/CE \qquad \text{Eq. (4)}$$

Step 5: Value Added Intellectual Coefficient (VAIC^{TM})

The final step is to calculate the Value Added Intellectual Coefficient (VAIC^{TM}), which is a composite sum of the intellectual capital efficiency and the capital employed efficiency and this indicates how much value a firm creates in total per monetary unit invested for each resource.

$$\mathbf{VAIC^{TM} = HCE + SCE + CEE} \qquad \text{Eq. (5)}$$

The amount of VA and the efficiency in utilizing IC can be measured quantitatively by using the above formulae. A high coefficient indicates a higher value creation using the firm's resources including IC.

VAIC has its strengths and weaknesses. In terms of its strengths, VAIC^{TM} provides a standardized and consistent basis of measure, thereby enabling the effective conduct of a comparative analysis. Sveby (2007) outlined 42 methods of measuring IC and there was no one best fit method of measuring IC. Secondly, VAIC^{TM} makes use of publically available and audited financial data and, therefore, the calculations can be considered objective and verifiable (Pulic, 2000; Pulic, 2004;Ho and Williams, 2003). Other IC measures were criticized due to subjectivity in measurement and difficulty in verification (Williams, 2001; Sveby, 2007). Thirdly, VAIC is a straightforward technique which enhances cognitive understanding and enables ease of calculation by various internal and external stakeholders (Schneider, 1999). Finally, the VAIC^{TM} method was applied to IC research of listed companies in many countries.

6.5.2 Corporate Governance and Firm-related Variables

There are five corporate governance and six firm-specific variables which were employed in the regression models. Table 5.3 provides operationalization of these variables.

Table 5.3

Variables and their Calculation

Variable name	*Acronym*	*Operationalization*
Dependent variables		
Return on Assets	ROA	Net income available to stockholders / Total assets
Tobin's Q	TQ	Market capitalization + Total liabilities / Total assets
Independent variables		
Value added	VA	Total income – Total expenses
Human capital	HC	Total personal expenses
Human capital efficiency	HCE	HCE = VA/HC
Structural capital	SC	SC = VA – HC
Structural capital efficiency	SCE	SCE = SC/VA
Capital employed	CE	Physical and financial capital employed
Capital employed efficiency	CEE	CEE = VA/CE
Value added intellectual coefficient	VAIC	VAIC = HCE + SCE + CEE
Governance-specific control variables		
Board-size	BSIZE	Log of total number of directors on board
Board structure	NED	Fraction of non-executive directors on the board to total board size
Leadership structure	Duality	Dichotomous; yes/no
Shariah supervisory board	SSB	Total number of *Shariah* advisors
Audit committee size	ACS	Log of total number of members serving on audit committee
Firm-specific control variables		
Firm-size	FSIZE	Log of total assets
Level of risk	Risk	Using leverage as proxy (Total debt/ Total assets)
Firm complexity	SUB	Total number of existing subsidiaries
Listing status	Listing	Dichotomous; yes/no
Type of auditor	BIG4	Big four vs. non-Big four
Operating region	Region	1 if the IFI is based in Gulf region, 0 otherwise

6.6 Data Analysis Method

6.6.1 Regression models

Multiple regression analysis is used to test the advanced propositions. This analysis is a statistical technique which can be used to analyze the relationship between a single dependent variable and several independent variables (Neter et al., 1996; Hair, 2009). An example of a multiple regression equation is as follows;

$Y = \alpha + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \ldots\ldots\ldots + \beta_k X_k + \varepsilon$

Where,

Y = predicted value of dependent variable;

α = y intercept, value of y when all x(s) = 0;

X = various independent variables;

$\beta_{1\ldots k}$ = various coefficients assigned to independent variables during the regression; and

ε = standard error of estimates

Regression results produce beta coefficients or regression coefficients which range from –1.00 to +1.00. These indicate the strength of the relationship between the dependent variable and the independent variables (Hair, 2009). In this research, they indicated the strength between (1) accounting performance of IFIs based on ROA –dependent variable and VAIC (including sub-components *viz*. HCE, SCE and CEE), and corporate governance-related variables (i.e. board-size, board-composition, role duality, size of *Shariah* supervisory board, and size of audit committee) –independent variables, and (2) market performance of IFIs based on Tobin's Q –dependent variable, and independent variables i.e. VAIC (including sub-components *viz*. HCE, SCE and CEE), and corporate governance-related variables (i.e. board-size, board-composition, leadership-structure, size of *Shariah* supervisory board, and size of audit committee). Adjusted R^2 explains the fit of model i.e. how much the model's variables are captured to explain the dependent variable.

6.6.1.1 Research objective 1

The main purpose of this study was to investigate the effects of IC efficiency and CG characteristics on the IFIs' economic performance, while controlling for firm-specific characteristics for the period 2007-2011. The research aimed, also, to ascertain the effect of intellectual capital elements *viz.* human capital efficiency (HCE), structural capital efficiency (SCE) and capital employed efficiency (CEE) respectively on performance (i.e. accounting performance based on ROA and market performance based on Tobin's Q) of IFIs.

Accordingly, two main regression models were developed to investigate the effects of IC (and its sub-components *viz.* HCE, SCE and CEE) efficiency and CG characteristics on IFIs' performance (i.e. accounting performance based on ROA and market performance based on Tobin's Q).

Regression Model 1:

$$ROA = \alpha + \beta 1 VAIC + \beta 2\ governance\text{-}specific\text{-}factors\ (lnBSIZE + duality + NED + lnSSB + lnACS) + \beta 3\ firm\text{-}specific\text{-}factors\ (lnFSIZE + risk + SUB + listing + big4 + region) + \varepsilon$$

Model 1 was used to measure the VAIC's impact VAIC on the IFIs' financial performance based on ROA. Since VAIC was a composite of three measures, three further regression models were run for HCE, SCE and CEE referred to as Model 1a, 1b and 1c, respectively.

Regression Model 2:

$$Tobin's\ Q = \alpha + \beta 1 VAIC + \beta 2\ governance\text{-}specific\text{-}factors\ (lnBSIZE + duality + NED + lnSSB + lnACS) + \beta 3\ firm\text{-}specific\text{-}factors\ (lnFSIZE + risk + SUB + listing + big4 + region) + \varepsilon$$

Model 2 was used to measure the VAIC's impact on the IFIs' market performance based on Tobin's Q. Since VAIC was a composite of three measures, three further regression models were run for HCE, SCE and CEE referred to as Model 2a, 2b and 2c, respectively.

6.6.1.2 Research objective 2

This research's secondary objective was to compare the impact of IC and CG on the IFIs' performance before and after the global financial crisis. The study covered a five year period i.e. 2007-2011. Since the global financial crisis started in the second half of 2007, consequently, its effects could be observed better in 2008. Therefore, years 2007 and 2008 were used as proxies to examine the effects of IC and CG features on the IFIs' performance before crisis while years 2010 and 2011 were used as proxies to examine the effects of IC and CG features on the IFIs' performance after the crisis. Regression models 1 and 2 were used while controlling for the time period i.e. before and after the financial crisis.

6.6.1.3 Research objective 3

This research's third objective was to compare the impact of (IC and CG on the performance of FFIBs and the Windows. As established earlier, the Islamic finance industry was not homogenous and, as such, not all the sampled IFIs included in this study were FFIBs. Since the sampled IFIs had different business orientations, there ought to be differences, also, in their performance. Therefore, the sampled IFIs were divided into two groups 1) FFIBs and 2) Windows. Regression Models 1 and 2 were re-run while controlling for bank type, being FFIBs or Windows, in order to determine the performance differences between the two sets of IFIs.

6.7 Chapter Summary

Research is a multi-stage process and different researchers adopt different processes depending on their research needs and given circumstances. This chapter explained some of the crucial stages of this study.

As established earlier, this study's primary objective was to examine the effects of (IC and CG features on IFIs' performance and, therefore, the study used mainly secondary data. Accordingly, the study adopted a quantitative research technique. This exhibited the relationship between theory and research as a deduction process; followed a positivist approach; and entailed the collection of numerical data.

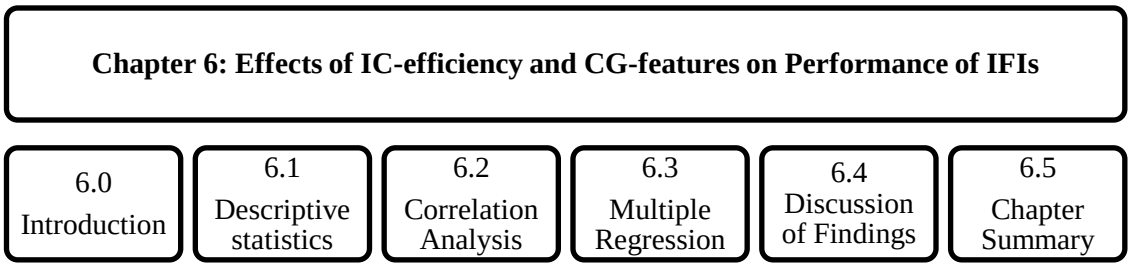
A total of 64 Islamic banks (37 banks were sorted as FFIBs and 27 banks were sorted as *Shariah*-Windows) operating in ten different countries. These were selected as the final sample. The total number of observations (annual reports/financial statements) was 320 for the five year period (2007-to-2011). The data, used in this study, was derived mainly from Bankscope database. In addition, the missing data was extracted manually from the annual reports of each financial institution.

The data, used in the study, met the assumptions of OLS and, therefore, the next step was to apply different statistical techniques in testing the research hypotheses and answering the research questions and, ultimately, fulfilling the research objectives.

Chapter 7: Effects of Intellectual Capital and Corporate Governance Features on Performance of Islamic Financial Institutions

6.0 Introduction

This chapter reports the findings for this study's first research objective which was to investigate, for the period 2007 to 2011, the effects of IC efficiency and CG characteristics on IFIs' performance while controlling for firm-specific characteristics,. It was to consider, also, the effects of each IC element *viz.* HCE, SCE and CEE on both sets of IFIs' accounting performance based on ROA and market performance based on Tobin's Q.



The chapter is organized as follows. Section 6.1 presents the descriptive statistics of the variables employed in the regression models. Section 6.2 presents the results for the correlation analysis. Section 6.3 reports the results of the multiple regression models followed by discussion of the findings in section 6.4. Finally, section 6.5 presents the summary of the chapter.

7.1 Descriptive Statistics

Tables 6.1, 6.2, and 6.3 show the descriptive statistics including the mean, standard deviation, minimum, maximum, skewness and kurtosis for the dependent and independent variables used in the models for the five years pooled data.

Table 6.1

Descriptive Statistics of Performance Measures and Continuous Independent Variables

	Mean	***Std. Dev.***	***Min.***	***Max.***	***Std. Skew.***	***Std. Kurt.***
N	320	320	320	320	320	320
ROA	0.666	2.374	-3.810	3.809	-0.483	2.245
Tobin's Q	0.830	0.275	0.245	1.126	-1.083	2.903
VAIC	3.925	2.018	0.361	7.030	-0.289	2.214
HCE	2.941	1.850	-0.281	5.898	-0.234	2.241
SCE	0.698	0.219	0.267	1.052	-0.441	2.800
CEE	0.191	0.156	-0.094	0.488	0.059	2.487

Notes: See Table 5.3 on page 171 for variable definitions.

The results of the pooled data for the dependent and IC-related independent variables are reported in Table 6.1. Focusing first on the dependent variables, it can be seen that the sampled IFIs' overall financial performance was sound as indicated by ROA with a mean of 0.67. Equally, the market based performance measure, Tobin's Q, has a mean of 0.83, suggesting that most of the sampled IFIs' market value was in excess of the book value of net assets.

As for the continuous independent variables in Table 6.1, it can be seen that the VAIC is 3.93, suggesting that, for the period 2007~2011, the sampled IFIs were generally effective in generating value from their IC and physical capital base. Furthermore, the descriptive statistics indicate that HCE, SCE and CEE all have positive means of 2.94, 0.70 and 0.19 respectively. The minimum values for HCE, SCE and CEE are -0.28, 0.27, and -0.09 while the maximum values for the same variables are 5.90, 1.05, and 0.49 respectively.

Table 6.2

Descriptive Statistics of Corporate Governance Features

	Mean	***Std. Dev.***	***Min.***	***Max.***	***Std. Skew.***	***Std. Kurt.***
BSIZE	9.013	2.948	4	19	1.407	5.803
lnBSIZE	2.150	0.280	1.609	2.773	0.178	2.896
NED	0.697	0.266	0.1	0.92	-0.678	2.442
SSB	4.197	1.822	1	12	1.480	6.835
lnSSB	4.122	1.450	2	7	0.585	2.147
ACS	3.441	0.847	2	6	1.535	6.626
lnACS	1.221	0.181	1.099	1.609	1.056	2.629
Duality	0.144	0.351	0	1	2.031	5.124

Notes: See Table 5.3 on page 171 for variable definitions.

Table 6.2 presents the descriptive statistics for the corporate governance characteristics considered in this study. It can be seen that the IFIs' average board size is nine; this is slightly above the recommended size of eight for board effectiveness (Haniffa and Hudaib, 2006). In terms of board composition, the mean percentage of non-executive directors on the boards is above 50%, with an overall mean of 70%, suggesting that NEDs remain in the majority of the sampled IFIs' boards. This is in line with the recommendations of the various corporate governance codes. With regard to the size of Shariah supervisory board and size of audit committee, it can be seen that the means for both variables are 4.20 and 3.44 respectively, indicating that the sampled IFIs follow a tightening monitoring policy. A mean of 14 percent for role duality suggested that role duality was uncommon in the sampled IFIs.

Table 6.3 presents the descriptive statistics for firm-specific variables used as control variables. As indicated by the descriptive results, the minimum and maximum value for firm-size is 10.79 and 16.84 with a mean of 14.36, indicating that the sampled IFIs sustained their total assets during the study period since there were no high variations in firm-size. Level of risk, which was measured using leverage as a proxy, had a minimum and maximum value of 4.37 and 77.99 respectively. This indicated the diversity in risk level within the industry. Firm complexity, measured by total number of existing subsidiaries (SUB), had a minimum and maximum value of 0 and 20 respectively, suggesting that the sampled IFIs followed diversified complex business structures. All other dummy variables i.e. listing status, type of auditor and region

remained relatively unchanged during the study period. For all the variables, skewness scores lay within the range of -1.96 and +1.96 as did the kurtosis scores within the suggested range of -3 to +3 (*see* Bruin, 2006; Cameron and Trivedi, 2009).

Table 6.3

Descriptive Statistics of Firm-specific Variables

	Mean	***Std. Dev.***	***Min.***	***Max.***	***Std. Skew.***	***Std. Kurt.***
N	320	320	320	320	320	320
lnFSIZE	14.361	1.557	10.787	16.836	-0.674	2.736
Risk	42.504	21.858	4.369	77.986	0.009	1.973
SUB	6.031	6.875	0	20	0.989	2.613
Listing	0.481	0.500	0	1	0.075	1.006
BIG4	0.813	0.391	0	1	-1.601	3.564
Region	0.469	0.500	0	1	0.125	1.016

Notes: See Table 5.3 on page 171 for variable definitions.

7.2 Correlation Analysis

Table 6.4 presents the correlations results between the dependent variables, ROA and Tobin's Q, and the independent variables. ROA is related positively with VAIC indicating that efficiency in creating corporate added value through IC enhanced a firm's financial performance. Similarly, ROA was found to be related significantly with HCE and CEE in a positive direction. As for the market performance measure, Tobin's Q was found, also, to be associated positively and significantly with VAIC, HCE, SCE, and CEE. As for the governance-specific variables, there was no significant relationship for any of the variables with the performance measures. In the case of firm-specific control variables, firm-size and listing status were related to both performance measures. Since none of the independent variables had correlation coefficients exceeding 0.7, multicollinearity problems did not exist. This was supported, also, by Variance Inflation Factor (VIF) results.

Table 6.4

Correlation Analysis

	ROA	*Tobin's Q*	*VAIC*	*HCE*	*SCE*	*CEE*	*lnBSIZE*	*NED*	*lnSSB*	*lnACS*	*Duality*	*lnFSIZE*	*Risk*	*SUB*	*Listing*	*BIG4*
Tobin's Q	0.2***															
VAIC	0.5578***	0.3256***														
HCE	0.656***	0.387***	0.907***													
SCE	-0.0299	0.146**	0.411***	0.2147***												
CEE	0.566***	0.3745***	0.56***	0.6076***	-0.0558											
lnBSIZE	0.0743	0.1641	0.0986	0.149**	-0.0256	0.1258										
NED	-0.1283	-0.0501	-0.2554***	-0.2496***	-0.1173	-0.1585**	-0.3582***									
lnSSB	0.1259	0.0503	0.1061	0.1464**	0.0131	0.0739	0.4267***	-0.144**								
lnACS	0.0599	0.0884	0.0748	0.099	0.0307	0.1163	0.1539**	-0.1015	0.0896							
Duality	0.1426	0.1749	0.1426	0.1694**	0.0058	0.1017	0.1995***	0.2165***	0.1624**	0.0295						
lnFSIZE	0.3376***	0.4194***	0.3725***	0.4397***	0.0366	0.4516***	0.1824**	-0.0552	0.2952***	0.116	-0.1985***					
Risk	0.1795**	-0.0388	0.1685**	0.204***	-0.1406	0.4576***	0.1823**	-0.1181	0.1318	0.1409	-0.1697**	0.3397***				
SUB	0.1494**	0.1067	-0.0584	-0.0424	0.0109	0.0477	0.0296	0.1259	0.1361	-0.1449**	-0.1525**	0.2423***	-0.036			
Listing	0.2479***	0.3363***	0.1269	0.1893***	-0.0481	0.1575**	0.3094***	-0.2097***	0.2344***	-0.0762	-0.1402	0.226***	0.1814**	0.2753***		
BIG4	-0.1255	-0.0571	-0.3272***	-0.3501***	-0.224***	-0.1071	-0.2251***	0.4668***	-0.1476**	0.014	0.2596***	-0.1881***	-0.0637	0.0675	-0.018	
Region	-0.0126	-0.0239	-0.0971	-0.0877	-0.2852***	0.0017	0.0606	0.1573**	-0.0921	-0.2739***	0.0993	-0.0548	-0.0626	-0.0517	0.2107***	0.4512***

***Notes*:** *** p<0.01, ** p<0.05

7.3 Multivariate Analysis

In order to test whether IC and CG features were associated significantly with performance of IFIs (i.e. accounting- and market-based performance measured by ROA and Tobin's Q respectively), regression analysis was conducted using STATA 13.1. Hence, the hypotheses, to be tested, were H1 and H2a-to-H2e, first based on ROA followed by Tobin's Q.

In order to examine the effects of IC and CG on the IFIs' performance, alternative versions of the following panel regression specification were estimated:

$$PERF = \alpha + \beta_1 VAIC + \beta_2\ GOV\ (lnBSIZE + NED + lnSSB + lnACS + duality) + \beta 3\ FIRM\ (lnFSIZE + risk + SUB + listing + big4 + region) + \varepsilon \quad \text{Eq. (1)}$$

PERF denotes one of the alternative performance measures (ROA or Tobin's Q), GOV includes all five measures of corporate governance-variables, and FIRM includes all six firm-specific control variables[42].

ROA = Return on assets (accounting performance);

Tobin's Q = Tobin's Q (market performance);

VAIC = Value added intellectual coefficient;

lnBSIZE = Log of board size;

Duality = Role duality;

NED = Non-executive directors;

lnSSB = Log of Shariah supervisory board;

lnACS = Log of audit committee size;

lnFSIZE = Log of firm size (total assets);

Risk = Level of risk, using leverage as proxy;

[42]Note that VAIC is a composite sum of HC, SC, and CE efficiency. In order to capture the impact of each sub-component of VAIC, four different regression models, referred as Model 1, 1a, 1b and 1c for accounting-based performance, and Models 2, 2a, 2b and 2c for market-based performance were run separately, where explanatory variable changes in each equation.

SUB = Total number of existing subsidiaries;

Listing = Listing status;

BIG4 = Type of auditor;

Region = Operating region;

α = intercept; and

ε = standard error of estimates.

Models 1 and 2 were used to measure the impact of VAIC and CG variables on the sampled IFIs' accounting and market-based performance.

Table 6.5 reports the results of the regression analysis based on ROA and Tobin's Q. Model 1 examined the association between the sampled IFIs' accounting performance and VAIC and CG and firm-specific features. The *F* -value for pooled data was significant at the 1% level and the adjusted R^2 was 35%. Focusing first on the results for the accounting-based performance measure, as reported in the second column of Table 6.5, it can be seen that, for the sampled IFIs, VAIC had a significant ($p < 0.01$) and positive relationship with ROA. Hence hypothesis H1 for accounting performance was accepted. The result implied that IFIs were efficient in creating value through their IC and financial capital resource-based and, consequently, were able to generate higher returns on assets.

Likewise, Model 2 examined the association between the sampled IFIs' market performance and VAIC and CG and firm-specific features. The *F* -value for pooled data was significant at the 1% level. The adjusted R^2 was 36%. Results for the sampled IFIs' market-based performance, as reported in the third column of Table 6.5, showed a positive and significant relationship between Tobin's Q and VAIC at the 1% significance level. Hence, hypothesis H1 for the sampled IFIs market-based performance was supported.

As for governance related variables, the results suggested that there was no significant relationship between the sampled IFIs' accounting-based performance and the governance-specific features. Thus, the hypotheses H2a-to-H2e for accounting performance were rejected. On the other hand, the results indicated a significant relationship between some governance-specific variables and market performance. Both

role duality (positively) and SSB (negatively) were related to market performance at the 1% significance level. Hence, hypotheses H2c was accepted for market performance while hypothesis H2d was rejected for market-based performance. Role duality referred to centralization of power and, for instance, Jensen (1986) proposed that role duality gave too much power to one individual who was more likely to pursue strategies which advanced personal interests to the detriment of the firm as a whole.

However, in the context of this study, the interpretation was somewhat different. Islamic banking was based on trust and extended the *stewardship* generally towards the middle and lower management. Furthermore, these findings suggested that combining the role of CEO and chairman impacted positively on the IFIs' market-based performance. These findings were quite the contrary to the previous research (Jensen, 1993; Yermack, 1996; Haniffa and Cooke, 2002; Lehn and Zhao 2006), which suggested that the board's monitoring efficiency was enhanced when the CEO had limited power to influence the board's agendas and actions. However, these results agreed with the stewardship theorists (Donaldson and Davis, 1991; Davis et al., 1997), who reasoned that managers were good stewards of corporations and acted in the best interests of their principals. Among other governance-specific characteristics and unlike the accounting-based performance measure, board size was found to be associated significantly with Tobin's Q at the 5% level, suggesting that markets perceive large boards as counterproductive for IFIs. Thus, hypothesis H2a for market-based performance was accepted.

Table 6.5

Regression Results of ROA and Tobin's Q

	Model 1	**Model 2**
	ROA	**Tobin's Q**
Constant	-3.946**	-0.485***
VAIC	0.621***	0.0292***
lnBSIZE	-0.486	0.144**
NED	-0.0446	0.0872
lnSSB	0.0326	-0.0351***
lnACS	0.620	0.0408
Duality	0.184	0.0978***
lnFSIZE	0.101	0.0737***
Risk	0.00546	-0.00377***
SUB	0.0455**	-0.00440**
Listing	0.603**	0.186***
BIG4	0.257	0.112***
Region	0.133	-0.0921***
N	320	320
Adjusted R^2	0.352	0.364
R-squared	0.3768	0.3878
F-Value	20.03***	17.45***

Notes: *** p<0.01, ** p<0.05

As for firm-specific variables, firm complexity and listing status related positively to ROA at the 5% significance level, suggesting that listed IFIs with complex business structures generated higher returns on assets. Hence, hypotheses H3b and H3d were accepted for accounting performance. All other firm-related variables were not statistically significant with ROA. Therefore, there was not enough statistical evidence to support hypotheses H3a, H3c, H3e, and H3f.

In contrast, all firm-related variables were found to have significant relationship with IFIs' market performance based on Tobin's Q at the 1% significance level. Hence, hypotheses H3a, H3b, H3d, and H3e were accepted for market performance. Furthermore, firm size, listing status and type of auditor were in the positive direction while level of risk, firm complexity and operating region were in the negative direction.

Hence, hypothesesH3c and H3f were rejected. The results implied that market value declined as risk and number of subsidiaries increases. Equally, IFIs based in regions, other than Gulf, tended to achieve higher market valuations.

7.3.1 Sub-components of VAIC and Performance

Furthermore, six sets (three sets for each performance measure) of regression Models were developed to measure the individual impact of VAIC measured separately by HCE and SCE; and CEE on the IFIs' accounting and market-based performance. The following section describes these Models.

7.3.1.1 Sub-components of VAIC and accounting performance of IFIs

Model 1a was used to measure the HCE's impact on the IFIs' accounting performance, based on ROA. The hypothesis, tested here, was H1a for accounting performance. The *F* -value for five year pooled data was positive and significant at the 1% level while the adjusted R^2 was 46% suggesting the Model's best fit. Model 1a's results are reported in the second column of Table 6.6. These indicated a significant and positive relationship at the 1% level between HCE and ROA, supporting hypothesis 1a for accounting-based performance. The results of both sets of control variables were similar to those reported in Model 1.

Model 1b was used to measure the impact of SCE on the sampled IFIs' financial performance, based on ROA. The hypothesis, tested here, was H1b for the sampled IFIs' accounting-based performance. The *F* -value for pooled data was significant at the 1% level while the adjusted R^2 was 14%. Model 1b's results, as reported in the third column of Table 6.6, showed no significant relationship between SCE and the accounting-based performance measure. Therefore, these did not support hypothesis H1b for the sampled IFIs' accounting-based performance. The results of the control variables were the same as observed in Model 1, with the exception of firm-size, which was related to ROA at the 1% significance level. This suggested that, as the firm size increased, the SCE increased, also, and reflected positively on the sampled IFIs' financial performance.

Table 6.6

Regression Results of ROA and Tobin's Q with HCE, SCE, and CEE

	Model 1a	**Model 1b**	**Model 1c**	**Model 2a**	**Model 2b**	**Model 2c**
	ROA	**ROA**	**ROA**	**Tobin's Q**	**Tobin's Q**	**Tobin's Q**
Constant	-1.966	-3.461	-0.575	-0.396**	-0.591***	-0.238
HCE	0.868***			0.0390***		
SCE		-0.506			0.136**	
CEE			8.617***			0.636***
lnBSIZE	-0.532	-0.891	-0.775	0.141**	0.127*	0.133**
NED	-0.169	-0.694	-0.0388	0.0803	0.0654	0.104*
lnSSB	0.0316	0.0184	0.0958	-0.0352***	-0.0353***	-0.0301***
lnACS	0.322	0.854	0.485	0.0280	0.0563	0.0242
Duality	0.132	0.227	0.388	0.0955***	0.103***	0.111***
lnFSIZE	-0.0209	0.385***	0.0739	0.0688***	0.0851***	0.0643***
Risk	0.00480	0.00549	-0.0145**	-0.00380***	-0.00346***	-0.00527***
SUB	0.0542***	0.0236	0.0199	-0.00406**	-0.00535***	-0.00571***
Listing	0.385	0.783***	0.769***	0.176***	0.192***	0.193***
BIG4	0.601*	-0.497	-0.384	0.126***	0.0848**	0.0847**
Region	0.0583	0.178	0.0262	-0.0953***	-0.0719**	-0.103***
N	320	320	320	320	320	320
Adjusted R^2	0.462	0.136	0.357	0.377	0.339	0.418
R-squared	0.4823	0.1688	0.3813	0.4007	0.3635	0.4401
F-Value	31.57***	6.28***	17.18***	18.07***	13.60***	28.52***

Notes: *** p<0.01, ** p<0.05

Finally, Model 1c's results, which examined the association between the sampled IFIs' accounting-based performance and CEE, are reported in the fourth column of Table 6.6. The F -value was significant at the 1% level, while the adjusted R^2 was 38% for the combined five-year period. These results were similar to those of Model 1a but with a slightly higher coefficient. The results suggested a positive and significant relationship at the 1% level between CEE and ROA, thus, supporting hypothesis H1c for IFIs'

accounting performance. The results for the control variables were found to be the same as observed in Model 1a with the exception of risk which was significant at the 5% level in the predicted direction.

7.3.1.2 Sub-components of VAIC and market performance of IFIs

Model 2a was used to measure the HCE's impact on the sampled IFIs' market performance, based on Tobin's Q. The hypothesis, tested here, was H1a for the sampled IFIs' market-based performance. The *F*-value was significant at 1% level while the adjusted R^2 was 38%. Model 2a's results are reported in the fifth column of Table 6.6. These indicated a positive and significant relationship at the 1% level between HCE and Tobin's Q, supporting hypothesis H1a for the IFIs' market performance. Similar to the accounting-based performance measure, the results for the market-based performance measure corroborated human IC as the primary source of value creation for the sampled IFIs. The results of governance-related variables and firm-specific variables were the same as observed in Model 2.

Model 2b was used to measure the SCE's impact on the sampled IFIs' market performance, based on Tobin's Q. The hypothesis, tested here, was H1b for the sampled IFIs' market-based performance. The *F*–value was significant at the 1% level while the adjusted R^2 was 34% for the combined five-year period. Model 2b's results, as reported in the sixth column of Table 6.6, showed a positive and significant relationship at the 5% level between SCE and Tobin's Q, thus supporting hypothesis H1b for the sampled IFIs' market-based performance. These results were contrary to those observed for the accounting-based performance in which case the analysis showed no significant relationship between SCE and ROA. These findings lent support to the argument, extended by Huang and Liu (2005), that investment in structural IC had a positive effect on performance. The findings were similar, also, to those of El-Bannany (2008) who examined the IC performance of UK banks and reported that investment in structural IC (i.e. IT systems) had a significant impact on the bank's performance. Consequently, although HCE and CEE appeared to be the main value drivers for IFIs, nonetheless, SCE played, also, a substantial role in determining the sampled IFIs' market valuations. The results of governance-related variables and firm-specific variables were the same as observed in Model 2.

Finally, Model 2c was employed to examine the association between the sampled IFIs' market performance and CEE. The *F* -value was significant at 1% level while the adjusted R^2 was 42%. CEE was found to have a positive ($p < 0.01$) and significant relationship with market performance, thus, supporting hypothesis H1c for the sampled IFIs' market-based performance. The results lent, also, support to the findings of Youndt et al. (2004) who found that firm performance was associated with Tobin's Q. The results of CG-variables and firm-specific variables were the same as observed in Model 2.

7.4 Discussion of Findings

The overall results depicted a positive relationship between VAIC and the sampled IFIs' performance i.e. accounting performance based on ROA and market performance based on Tobin's Q. These findings supported the main research hypotheses that there were positive and significant relationships between VAIC and the sampled IFIs' performance based on ROA and Tobin's Q respectively. However, the results of the segregate analysis of the VAIC sub-components on both sets of performance measures suggested some differences in the sampled IFIs' accounting and market-based performance. It should be pointed out that when each of the three sub-components of VAIC *viz.* HCE, SCE, and CEE were analysed separately, the statistical analysis produced different results.

7.4.1 Accounting-based Performance of IFIs

IC (measured by VAIC) was expected to be one the major determinant for the sampled IFIs' accounting performance, based on ROA. The significant positive result supported the hypothesis that there was a significant and positive relationship between VAIC and the sampled IFIs' accounting performance.

The results agreed with the earlier research in the context of conventional financial institutions. The study endorsed the findings of Ting and Lean (2009) who examined the relationship between IC and the financial performance of Malaysian financial institutions for the years 1999-2007. The study revealed a positive and significant relationship between VAIC and ROA. The findings were in agreement with

Muhammad and Ismail (2009), who observed a higher contribution of IC in the value creation efficiency of Malaysian commercial banks. The results lent support, also, to the findings of do Rosário Cabrita and Vaz (2005) who, after surveying 53 affiliated members of the Portuguese Bankers Association, found that IC was related substantively and significantly to the organizational performance of the Portuguese banking industry,. Likewise, the results were consistent with Yalama and Coskun (2007) who posited that, for banks listed on the Istanbul Stock Exchange Market, human IC was a more important factor than physical and financial capital.

As a consequence, it was to establish that VAIC indicated efficiency in creating corporate value or the extent of corporate intellectual ability. In other words, the higher the value creation efficiency of an IFI, the higher is its financial performance. Hence, it can be said crucially that VAIC implies efficiency in creating corporate value or financial performance.

Based on the results reported in this study, it is argued that IC acts as a major source of corporate advantage to IFIs since IC efficiency is associated strongly with the IFIs' profitability. Hence, these results lend support to the arguments, drawn from resource-based view of the firm, that IC is a strategic asset which has a positive impact on a firm's performance. It is established that IC should be recognized, also, as one of the major investments in driving the firm's sustainable growth. These claims found support in the previous studies. For example, Mavridis (2004) and Saengchan (2008), who analyzed the contribution of IC and physical resources to the value-added efficiency of Japanese and Thai banks respectively, submitted that the best performing banks were those which utilized their IC resources more effectively than the physical ones.

In summary, the comparative analysis of this study to the existing literature suggested a varying degree of linkages between IC-efficiency and financial performance. Although these studies provided a significant amount of empirical evidence, nevertheless most studies continued to focus on a particular sector and, hence, were country specific. Therefore, it was difficult to generalize these studies' findings. This study mitigates such concerns. In a departure from the existing literature, this study used 64 IFIs based in ten different geographical locations around the globe. Therefore, this study's results are arguably more reliable and robust since the study gathered

evidence from ten financial sectors. Moreover, the use of panel data, for the 5 years from 2007 to 2011, justifies the contributions made by this study.

The results strongly supported the hypothesis that HCE was associated positively with the sampled IFIs accounting-based performance. The results corroborated human IC as the primary source of value creation; this allows for a better understanding of the hidden values of intellectual wealth (Subramaniam and Youndt, 2005). This implies that human IC is the precursor for an IFI's intellectual wealth of. In other words, with the development of human IC, an IFI's ability to merchandise its IC results in higher profitability. These findings are in line with the suggestion of Colombo and Grilli (2005) that firms with greater human IC (i.e. higher education or skill) were likely to have better entrepreneurial judgment and, as long as human IC continued to be developed, staff could improve their job performance and, ultimately, improve the firm's performance (Hsu, 2007).

This study's results were consistent with the earlier studies in the financial sector (Goh, 2005; Mavridis and Kyrmizoglou, 2005; Mention and Bontis, 2013), who reported that human IC contributed both directly and indirectly to business performance in the banking sector. As established earlier, human IC is most significant for IFIs since employees are expected to have not only conventional knowledge and skills related to the provision of banking services but, also, to possess strong knowledge of Shariah as this will enhance the IFIs' credibility and reputation in the market place. Arguably, knowledge embedded in the human IC in employment by the IFIs is valuable, rare, and isolated from imitation or substitution; this assists IFIs in sustaining superior performance. The resource-based view of the firm gives rise to this argument that firms can achieve and sustain competitive advantages by mobilizing valuable resources and capabilities that are inelastic in supply (Barney, 1991; Peteraf, 1993; Wernerfelt, 1984). In what follows, the IFIs' capability of value creation is regarded as being equal to Shariah scholars (human IC) who are rare and, thus, offer a tremendous potential for IFIs to exploit the rare characteristics of a diverse employee (SSB) base for competitive advantage.

SCE, the second sub-component of VAIC, was assumed, also, to be associated positively with ROA; however, the results reported otherwise. No significance support was found for the hypothesis that there is a significant positive relationship between ROA and SCE. Therefore, the results do not lend support to the findings of Youndt et

al. (2004) who found structural IC to be associated typically with financial returns. However, this study's results lend support to the argument that there may be trade-offs between the elements of IC, as proposed by Murthy and Mouritsen (2011). This suggests that multiple forms of IC may be unproductive. Consequently, not all investments in the IC- elements are profitable (Li, 2001).

The Islamic finance industry is still in its infancy and striving with many challenges. One of the potential challenges, facing Islamic finance, is to meet up with the increasing demand for Shariah-compliant products and services. Also, in order to provide these services, IFIs have to be present physically in various markets, either where they do not exist or the numbers of operational branches are fairly limited. Ultimately, Islamic finance needs to expand itself. Such expansion requires some sort of structural mechanism in order to supplement the human capital. As established earlier, although human capital is essential for product innovation, structural capital is equally important for human IC to work better. In other words, structural IC constitutes the supportive infrastructure which enables human IC to function in an organization (Zéghal and Maaloul, 2010). Hence, IFIs may acquire all such non-human storehouses of knowledge ranging from tangible assets protected by law such as, copyrights, patents, databases, trademarks, computer and software to corporate culture, trust among employees, transparency, management processes, information system and all other elements which enable employees to give better productivity. The acquisition cost of the said resources is high at present while, as reflected in the results, the return is low. Structural capital is a onetime expense in case of tangible resources i.e. office building, whereas the technological resources, such as software, keep updating. Therefore, it is argued that, eventually, investments in structural resources will have a positive impact on the IFIs' efficiency and profitability.

This argument found comprehensive support in existing literature on conventional finance. For instance, El-Bannany (2008) , studied the IC performance of UK banks for the years 1999-2005 and submitted that investments in structural capital, i.e. IT systems, had a positive impact on the bank's profitability. A similar suggestion was made by Hsu and Wang (2012), who posited that structural IC, i.e. operations, procedures and the processes of knowledge management, propelled organizations' value creation activities which had a positive effect on their performance. In other words, IFIs require advanced technologies to compete in today's fast-paced economy. Hence, IFIs,

with strong structural IC, will have a supportive culture with will encourage employees to try and learn new knowledge (Florin et al. 2003) and this will impact significantly on their performance (De Brentani and Kleinschmidt, 2004). Accordingly, it is expected that the contribution of structural IC to the total value added efficiency of IFIs will increase over time and it will have an ultimate positive affect on their accounting performance.

Capital employed efficiency (CEE) is the third sub-component of VAIC, recognized to be related positively to the IFIs' accounting performance. The results lend support to the hypothesis that there is a positive relationship between CEE and ROA, suggesting that CEE is a significant factor in explaining the IFIs financial performance. Likewise, in the context of conventional finance, studies regarded financial capital to be an important factor in determining a bank's profitability. For instance, Mavridis (2004) found a significant and positive correlation between ROA and CEE. Similarly, Kamath (2007) found that, when compared to their foreign counterparts, Indian public sector banks were the top performers in CEE as. In an extended research on the Hong Kong Stock Exchange, Chu et al. (2011) found that CEE was a major determinant of the financial performance.

In summary, the IFIs' accounting based performance was driven mainly by HCE in addition to CEE, while SCE was not found to be associated significantly with ROA. These results provided sufficient evidence to accept hypotheses H1a and H1c for accounting performance that HCE and CEE were related positively to the sampled IFIs' accounting based performance. On the other hand, the results did not support the hypothesis H1b for accounting performance that SCE was related significantly to ROA. However, the results served the research objectives of examining the impact of sub-components of VAIC on the sampled IFIs' accounting-based performance. The statistical analysis implied that human capital was the main value driver for IFIs. This meant that this study's sampled IFIs possessed substantial human IC i.e. higher education and knowledge (including Shariah-knowledge) to make better entrepreneurial judgments when using these skills to deploy financial capital. This inference found support, also, in other literature streams. For instance, human capital theorists (Becker, 1964; Schultz, 1961), reasoned simply that an increase in worker skills, knowledge, and abilities translated most likely into increased organizational performance. In other words, human IC i.e. when people possess high levels of knowledge and skills and

generate new ideas and techniques which can be embodied in product innovation and, as a consequence, improve a firm's performance (Berg, 1969). This study's results lent, also, support to the argument of Dakhli and De Clercq (2004) who suggested that a firm's stock of human IC would influence its profitability.

On the other hand, the results of the governance related variables were discouraging since none of the governance-specific variable was found to be related significantly to the IFIs' accounting performance, based on ROA. This implied that CG features had no impact on the IFIs' financial performance. Nonetheless, the analysis served the purpose of the study which aimed to examine the relationship between CG features and the sampled IFIs accounting-based performance. Equally, among firm-specific variables, listing status and firm complexity (SUB) related positively to ROA at the 5% level of significance; this suggested that listed IFIs with complex business structure generated higher returns on assets.

To summarize, the overall results were in agreement with previous studies (*e.g.*, Adams and Santos, 2006; Ting and Lean, 2009; Mondal and Ghosh, 2012), which, in the context of conventional financial institutions, documented a positive relationship between the banks' accounting based performance and IC efficiency. Furthermore, the results indicated a significant positive relationship between financial performance and the variables, CEE and HCE. This suggested that ROA captured the VAIC from both CEE and HCE. The results suggested, also, that higher returns on assets were associated with IFIs who were listed and followed complex business structures. Overall in the context of the sampled IFIs, these findings were consistent with previous research in the context of conventional banks (*see* Mavridis, 2004; Goh, 2005; Murthy and Mouritsen, 2011), who posited that the best performing banks were those that utilized their human intellectual capital and physical capital.

7.4.2 Market-based Performance of IFIs

Two performance measures: ROA, which is accounting measure; and Tobin's Q, which is market-based performance, were used to measure the sampled IFIs overall performance of. In the case of the latter, IC (measured by VAIC) was expected to be one the major determinant for the sampled IFIs' market-based performance. The significant positive result supported the hypothesis that, based on Tobin's Q, there was a

significant positive relationship between VAIC and the sampled IFIs' market performance.

These findings were in agreement with the earlier research. For instance, the results supported the findings of Youndt et al. (2004) who found that the firm performance was associated with Tobin's Q. Similarly, the results agreed with Wang (2008) who posited that IC had a strong impact on the competitive advantage and market capitalization of the US companies. This implied that the IFIs' competitive advantage laid in the better utilization of their IC resources. An argument supported by the RBV. Furthermore, this study's results were arguably more encouraging than those reported by Zéghal and Maaloul (2010) who examined IC's impact on 300 UK firms' overall performance i.e. financial and stock market. By employing VAIC methodology the study revealed that IC had a positive impact on firms' financial performance but the relationship between IC and stock market performance was significant only in the case of high-tech industries.

This inferred that the services sector generally and financial institutions in particular were undoubtedly high-tech industries which possessed a higher degree of IC stock. The banking sector, which IFIs part of, has experienced a dynamic and competitive environment due to the globalization of economies and has grown as a knowledge concentrated sector (Mavridis, 2004). Furthermore, the basic nature of the banking business is knowledge intensive (Chen et al., 2014) and the entire banking sector staff is intellectually more identical (Kubo and Saka, 2002) and consistent with perhaps any other service or business industry in any economy (Joshi et al., 2013). For IFIs, the interpretation of knowledge, embedded in their human capital, is somewhat broader when compared to their conventional counterparts. This is because, here, knowledge here not limited to conventional knowledge to running a financial system but knowledge of Shariah is, also, equally essential for the IFIs' staff members. The market perceives the IC stocks, particularly the IFIs' human capital, as being competent and knowledge rich and the market extends its trust towards these institutions; ultimately, this results in higher market values for IFIs.

This is evident from the results of the HC efficiency; there was a positive association with the IFIs' market-based performance. This supports the hypothesis that HCE is an important determinant of the IFIs' market valuations. The analysis of the

other two sub-components of VAIC *viz*. SCE and CEE suggested the same with varying statistical significance.

Contrary to the accounting-based performance, the IFIs' market-based performance was driven by strong CEE, followed by HCE and, to a lesser statistical significance, SCE. Therefore, the results indicate clearly that investors place different values on each of the three components of VAIC, since CE efficiency is treated differently from the other two components i.e. HC efficiency and SC efficiency.

The relationship between the IFIs' market-based performance, measured by Tobin's Q and governance-specific variables, was encouraging, also. The results indicated that markets tended to place higher values on those IFIs which did not follow the CG codes such as having role duality, having a small size of SSB, and having higher than the average board-size e.g. seven members (Jensen, 1993). The analysis served the purpose of the study which aimed to examine the relationship between the sampled IFIs' market-based performance and governance-specific variables. Although there was a shallow relationship between the sampled IFIs' governance-specific features and accounting-based performance, there were strong relationships between corporate governance features and the market-based performance measure. Tobin's Q could be observed with varying degrees of statistical significance.

All the board characteristics i.e. board-size, board composition (NED), leadership structure (role duality), size of Shariah supervisory board and size of audit committee were expected to be the major elements in explaining the sampled IFIs' performance. However, all of the above factors related significantly and solely to the sampled IFIs' market base performance.

Board-size was found to be associated positively with Tobin's Q, suggesting that the sampled IFIs with large board size tended to have higher market valuations. This result was similar to those of Adams and Mehran (2003) and Adams and Mehran (2005) who found that, based on Tobin's Q, larger boards related positively to the commercial banks' market values. Consistent with Adams and Mehran (2005) and Andres and Vallelado (2008), this study's results challenge the widespread belief of the agency theory tenants (Provan 1980, Goodstein et al. 1994) that small boards are more efficient and that shareholder interests can be compromised if the board is too large (Hoechle et al., 2012). Contrarily, the results suggest that for IFIs (both Shariah and finance-related)

larger boards might prove more efficient in advising and monitoring functions, creating more value and, thus, achieving higher market valuations.

Another relevant finding to emerge was that board size was a trade-off between advantages i.e. more advising and more monitoring to deal with problems and disadvantages i.e. control and coordination problems. This finding supported the argument extended by Andres and Vallelado (2008). Hence, the central belief shielding the ‘‘one-size-fits-all” in corporate governing-boards, particularly the reduction in board size, was inappropriate when other functions beyond the disciplinary and specificity of the Islamic banking industry were taken into account. Therefore, it is difficult to assume that increasingly larger boards create more value. This result challenges the empirical evidence in corporate governance literature: large boards encounter problems of coordination, control, and decision-making. A plausible explanation for the stated results is that it is significantly more complex for IFIs' boards to monitor and advice on simultaneously both Shariah and contemporary finance related activities. Therefore, for IFIs, a larger board is justified since more directors are available to assign more people to advise and supervise on the managements' decision. Equally, more advisors and supervisors make it easy to detect the managers' opportunistic behaviours and to reduce managers' discretionary powers. Arguably, for IFIs, larger boards are more efficient than small boards. Thus, the inclusion of more directors should benefit the IFI's advisory and monitoring functions and, hence, lead to improved governance and increased market valuation.

The obtained empirical evidence concurred partially with a recommendation included usually in the codes of good practices, namely, the advisability of appointing outside directors. Board composition (fraction of non-executive directors (NED) on the board) was the second governance related variable used in this study. Surprisingly, NED was found to be unrelated to the sampled IFIs' market-base performance. The result was inconsistent with the earlier research that Tobin's Q increased as the fraction of outside directors on the board rose (Coles et al., 2008). Also, the result did not support Andres and Vallelado's (2008) argument that, as predicted by the agency theory, the presence of outside directors on banks' boards would improve the supervision of management and reduce the conflict of interest among stakeholders.

Leadership structure (role duality) was another potential corporate governance feature in explaining the sampled IFIs' market performance. Role duality was found to

be related to Tobin's Q in the predicted direction; this suggested that combining the CEO's authoritative role and chairmanship of the board impacted positively on the sampled IFIs' market performance.

The results did not support the proposed hypothesis that there was a positive and significant relationship between size of Shariah supervisory board (SSB) and IFIs' market-based performance. The strong statistical significance (at the 1% level) in the negative direction suggested that markets did not appreciate a larger sized SSB. As established earlier, the employees (human IC), including the board members, were expected to have knowledge of Shariah and contemporary economics. Accordingly, the members of staff were expected to be in need of less Shariah supervision. Therefore, a larger SSB was not essential. The significant negative relationship suggested that a large SSB was subject to higher costs and, ultimately, the markets placed lower values on IFIs with a larger sized SSBs. Audit Committee Size (ACS), the fifth CG related variable, was not found to affect the sampled IFIs' market performance and the proposed hypothesis was rejected.

In the case of market-based performance and based on Tobin's Q at the 1% significance level, all firm-related controlled variables were found to have a significant relationship with the sampled IFIs' market performance.

Firm size, using log of total assets as a proxy, was found to be positively significant for Tobin's Q; this was in line with the previous studies on IFIs (*see* Bashir, 1999; Majid et al., 2010; Čihák and Hesse, 2010). This implies that large IFIs differ from their smaller counterparts in terms of market valuation. The explanation for the significant size effect on market-based performance was that large IFIs possessed relatively higher shares of physical and financial capital bases and their operations were often more complex as were their needs for IC stocks. Such increased access to resources influenced the development and level of IC. Therefore, larger IFIs tended to have better stocks of IC particularly, human IC, since staff accumulated specialized information, skill and know-how. These allowed them to communicate efficiently and effectively and, thus, reduce decision-making errors and improve performance (Luthans and Youssef 2004).

Opacity or complexity played a significant role in both the internal (between governing body and management) and external (all other stakeholders) interactions.

Firm complexity[43] was related significantly to Tobin's Q in the negative direction; this suggested that the IFIs' management struggled to manage effectively every aspect of their business. A likely explanation for the negative effect of firm-complexity on the sampled IFIs' market performance was that IFIs, with a greater number of subsidiaries, were more complex and, ultimately, needed higher internal controls and greater in-house capabilities (Zaman et al., 2011). This meant that such IFIs needed higher structural IC to operate and higher human IC to run the system like well-oiled machines. Acquisition of higher IC resources (i.e. structural and human IC) was costly and, therefore, it was reflected negatively in the analysis. However, a positive relationship was expected in the long run.

Furthermore, level of risk was hypothesised to be an important firm-related variable in explaining the sampled IFIs' performance. Although there was a positive relationship between the sampled IFIs' accounting performance and levels of risk, the relationship was not statistically significant. On the other hand, based on Tobin's Q, leverage related significantly and negatively with the sampled IFIs' market performance. The result implied that the IFIs' market valuations declines as leverage went up. Simply, the investors perceived highly leveraged IFIs to be more risky and tended to place lower values on such IFIs.

Listing status was hypothesised to be an important firm specific feature in explaining the sampled IFIs' market performance. Contrary to the earlier findings of Yudistira (2004) in the field of Islamic finance, the significant and positive relationship suggested that listing status had a positive impact on the sampled IFIs' market values. This implied that Islamic finance operated in the global context and the phenomenon of Islamic banking and finance was not subject to any geographical limitations. The stability of the Islamic finance industry during the recent financial meltdown attracted the attention of many players in the financial markets both locally and internationally. Listed firms were considered more credible by the investors and, hence, listing provided

[43]According to Andres and Vallelado (2008) "bank opacity or complexity reflects the idiosyncratic nature of the banking business and the difficulties outside stakeholders face when monitoring bank transactions. Issues concerning complexity are common in banking, making it difficult for stakeholders to monitor their bank. Complexity can take the form of the quality of loans not being clearly perceived, financial engineering not being transparent (it is particularly significant for IFIs as all the products must not violate the divine guidelines), financial statements proving complicated, investment risk that can be easily modified, or perquisites that are easier for managers or insiders to obtain (p. 2571)".

IFIs with additional credibility and visibility in the markets; this enhanced their market performance.

The type of auditor (BIG4) was found to influence the IFIs' market-based performance and the proposed hypothesis was accepted. The significant results might be due to the fact that the majority of the sampled IFIs used one of the big-4 auditors. Consistent with Chen and Li (2013), it is argued that high-quality audit reduces the likelihood of managerial asset diversion and enhances the IFIs' market value. Furthermore, the results are contrary to the widespread argument that firms with internal control problems are less likely to hire a BIG4 auditor because they might be constrained financially and consider a BIG4 firm to be expensive. Arguably, the sampled IFIs were not suffering from internal control problems because they were audited by both external auditors (i.e. BIG4) to ensure the credibility of their financial statements and by in-house auditors (Sariah-audit) to ensure their financial statements were in accordance with the Shariah guidelines.

Finally, the operating region was found to influence the sampled IFIs' market performance (in the negative direction) and, hence, the proposed hypothesis was rejected. The negative direction of the relationship suggested systematic differences in investments in IC stocks and performance outcomes across geographical locations. The analysis suggested that the market-based performance of IFIs, operating in regions other than the Gulf, tended to be influenced by their locations. This finding is consistent with Yudistira's (2004) earlier research in the field of Islamic finance. Market performance differences can be explained also by the fact that this research included 64 IFIs operating in ten different countries worldwide. The sample countries ranged from high (i.e. Qatar) to relatively low (i.e. Bangladesh) income economies and significant differences existed in many characteristics including those related to social structure, economics, politics, and geography (Majid et al., 2010). However, the results did not support Iqbal and Molyneux's (2005) argument that countries with high level of economic development, i.e. Bahrain, attracted confidence among investors. It is not to say that the comprehensive regulatory framework in the Gulf region is an advantage for IFIs operating within the region over those IFIs operating in poorly regulated countries, such as Bangladesh and Pakistan, which are plagued, also, by the effects of political unrest, quite the contrary. Nonetheless, market confidence seems to be high in those IFIs operating in regions other than the Gulf.

Overall, the analysis suggested that markets placed substantially higher values on those IFIs which were large in size; had lower leverage; were listed; adopted less complex business structures; were audited by large audit firms (BIG4); and were located in regions other than the Gulf. Equally, the results indicated that markets tended to place higher values on those IFIs which did not follow the CG codes and, as such, had role duality; had a small sized SSB; and had board-size higher than the average e.g., seven members (Jensen, 1993).

In synthesizing the above discussion and comparing t this study's results to the existing literature, it can be seen that the overall results of the IFIs' accounting and market-based performance were in agreement with previous studies which, in the context of conventional banks, documented a positive relationship between ROA, Tobin's Q and the bank's performance. Furthermore, the results indicated a significant and positive relationship between financial performance and the variables, CEE and HCE, suggesting that ROA captured the VAIC from both CEE and HCE. On the other hand, the results, based on Tobin's Q, indicated a positive and significant relationship between market performance and the variables, CEE, HCE, and SCE. This suggested that the market captured the VAIC from all three sub-components *viz.* CEE, HCE, and SCE.

7.5 Chapter Summary

The main contribution of this research was to examine the impact of IC and CG features on the accounting and market-based performance of 64 IFIs operating in ten different countries worldwide for the period 2007–2011. The results indicated a significant positive relationship between VAIC and IFIs' performance based on ROA and Tobin's Q.

The results of the accounting-based performance indicated a significant positive relationship between financial performance and the variables, CEE and HCE, suggesting that ROA captured the VAIC from both CEE and HCE. On the one hand, none of the governance related variable was found to explain the IFIs' accounting performance. On the other hand, the IFIs' market-based performance was found to be driven by strong CEE and HCE and, to a lesser statistical significance, SCE, suggesting that the market captured the VAIC from CEE, HCE and SCE. Additionally, corporate

governance features and firm-related variables played a significant role in determining the sampled IFIs' market performance. The results indicated that markets tended to place higher values on those IFIs which did not follow the CG codes such as having role duality; having a small sized SSB; and having larger governing boards. Equally, markets placed substantially higher values on those IFIs which were large in size; had lower leverage; were listed; adopted less complex business structures; were audited by large audit firms (BIG4); and were located in regions other than the Gulf.

As mentioned earlier, one reason to select the time period i.e. 2007-2011 was to examine the impact of the recent global financial crisis on the IFIs' performance. For these reasons and consistent with this research's second objective, the next chapter (Chapter 7) analyses the sampled IFIs performance before and after the global financial crisis.

Chapter 8: Effects of Intellectual Capital and Corporate Governance Features on Performance of Islamic Financial Institutions Pre- and Post-financial Crisis

7.0 Introduction

The financial crisis, which started in the US subprime sector in 2007, destroyed the equity of many worldwide financial institutions by the end of 2008. The failure of financial intermediaries resulted in a freeze of global credit markets and required government interventions on a global scale. As a result, many leading conventional banks either collapsed or were bailed out (Erkens et al., 2012). Urged by the seriousness of the crisis, many studies examined the root causes of the financial crisis. Academic researchers, practitioners, policy makers and other related commentators suggested that a combination of macroeconomic factors, such as loose monetary policies (Erkens et al., 2012), complex securitizations (Taylor, 2009), and lax corporate governance (Diamond and Rajan, 2009; Kirkpatrick, 2009; Bebchuk and Spamann, 2009) contributed to making the financial crisis as serious as it was. While these studies are clearly important, they do not explain why some financial institutions performed better than others, despite the fact that these institutions were exposed to the same macroeconomic factors. Furthermore, these studies measured firm performance using traditional tangible financial indicators i.e. profitability ratios and market ratios and ignored the intangible aspects i.e. IC. It is not to say that financial and market ratios are key performance indicators used to ascertain a firm's financial health, quite the contrary. Various stakeholders i.e. bank managers and investors use these indicators generally to access the bank's current performance, future survival probability and market share. Market share is a key issue, suggested by Aghion and Stein (2008), which concerns bank management and often banks assess their performance relative to each other on this basis (Berger and Bouwman, 2013).

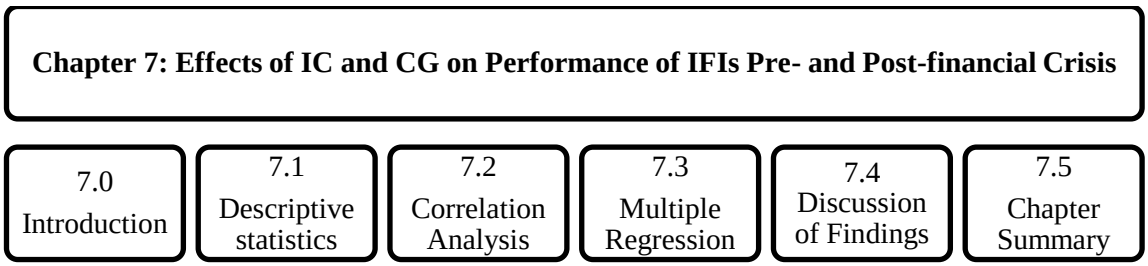
As argued earlier in Chapters 2 and 4, IC is a strategic asset which helps an organization to maintain its profitability and to sustain competitive advantage in the market. IC is highly significant to IFIs since the whole phenomenon of Islamic banking is based on the intangible ideology of Shariah –the Islamic divine law. Therefore,

knowing how IFIs' IC stock affects a bank's performance i.e. profitability and market valuation, is of paramount importance.

For instance, Peni and Vähämaa (2012) opined that, to a large extent, the recent financial meltdown of 2007–2008 was attributable to excessive risk-taking by banks. Likewise, Brunnermeier (2008) suggested that firms' risk management and financing policies had a significant effect on the degree to which firms were affected by the economic crisis. Kashyap et al. (2008) argued that the firms' financing and risk management policies were the ultimate outcomes of 'cost-benefit trade-offs' made by governing bodies. This suggested that corporate performance had been affected by the adopted governance mechanism (Erkens et al., 2012). Correspondingly, academic studies emphasized that flaws in bank governance played a key role in the banks' performance (Bebchuk and Spamann, 2009; Diamond and Rajan, 2009). Generally, the idea was that banks with poor governance engaged in excessive risk taking which caused them to make larger losses during the crisis. Furthermore, the empirical evidence showed that poor governance could lead executives to take fewer risks to protect their private benefits from control (Angelides and Thomas, 2011; John et al., 2008). This channel argued that better governed banks were risk seeking and, ultimately, this led them to poor performance during the financial meltdown. In contrast, Graham and Narasimhan (2004), referring to the perspective weathered by firms during the Great Depression, posited that, once the crisis had affected banks adversely, banks with strong governance mechanisms might have been better at coping more effectively with the crisis because of their better decisions. With this channel, banks with better governance might have made wiser decisions during the crisis and, hence, they would have had sound profitability and better market valuation. An extensive amount of empirical literature (Sierra et al., 2006; Caprio et al., 2007;Andres and Vallelado, 2008; Laeven and Levine, 2009;Jiraporn and Chintrakarn, 2009; Webb Cooper, 2009) suggested that strong corporate governance mechanisms had positive effects on the financial and market-based performance of conventional banks. Whereas there was limited and shallow empirical evidence from the Islamic finance industry (Grais and Pellegrini, 2006; Matoussi and Grassa, 2012).

Given the divergent views in the literature, the issue of the effects of IC and CG-features on the performance of financial institutions, the magnitude of these effects, and how they might differ across time horizons i.e. pre- and post-financial crisis boils down

to an empirical question, one that is confronted in this chapter. In particular, this chapter's goal is to examine empirically the effects of IC and CG-features on two dimensions of bank performance –accounting performance based on ROA and market performance based on Tobin's Q, before- and after-financial crisis, while controlling for firm-specific characteristics.



The chapter proceeds as follows. Section 7.1 presents the descriptive statistics of the variables employed in the regression models. Section 7.2 presents the results of the correlation analysis. Section 7.3 reports the results of the multiple regression models followed by discussion of the findings in section 7.4. Finally, section 7.5 presents the summary of the chapter.

8.1 Descriptive Statistics

Table 7.1 shows the descriptive statistics for the selected firm characteristics, including mean, standard deviation, minimum, and maximum for IFIs before the financial crisis (Panel A) and after the financial crisis (Panels B) and for all the dependent and independent variables used in the models. Focusing first on the dependent variables, it can be seen that, before the crisis, the sampled IFIs' overall financial performance was sound as indicated by ROA with a mean of 1.92. However, it should be noted that after the crisis, the mean of -0.05 for ROA, demonstrated the substantial impact of the financial crisis on the sampled IFIs' accounting performance. As can be noted from the table, Tobin's Q on average was steady at all times with a mean of 0.82, suggesting that although the sampled IFIs were less profitable after the crisis, investors' confidence in the sampled IFIs remained unshaken.

As for the continuous independent variables, it can be seen that, before and after the crisis, the of VAIC's average mean is 4.49 and 3.51 respectively, suggesting that the sampled IFIs were generally efficient in generating value from their IC and physical capital base. The descriptive statistics, related to the independent variables, indicate that

HCE, SCE and CEE have positive means of 3.47, 0.70, and 0.22 (before the financial crisis) and 2.57, 0.69, and 0.18 (after the financial crisis) respectively.

Table 7.1

Descriptive Statistics of Performance Measures and Continuous Independent Variables

	Mean	***Std. Dev.***	***Min.***	***Max.***
	Panel A: Before the Financial Crisis			
ROA	1.923	2.066	-3.810	3.809
Tobin's Q	0.825	0.273	0.245	1.126
VAIC	4.490	1.854	0.361	7.030
HCE	3.471	1.661	-0.281	5.898
SCE	0.700	0.191	0.267	1.052
CEE	0.220	0.136	-0.094	0.488
lnBSIZE	2.144	0.283	1.609	2.773
NED	0.700	0.264	0.100	0.920
lnSSB	4.117	1.530	2.000	7.000
lnACS	1.209	0.175	1.099	1.609
Duality	0.148	0.357	0.000	1.000
lnFSIZE	14.313	1.447	10.787	16.836
Risk	39.318	22.325	4.369	77.986
SUB	5.875	6.799	0.000	20.000
Listing	0.484	0.502	0.000	1.000
BIG4	0.813	0.392	0.000	1.000
Region	0.469	0.501	0.000	1.000
	Panel b: After the Financial Crisis			
ROA	-0.045	2.167558	-3.81	3.809
Tobin's Q	0.822	0.284	0.245	1.126
VAIC	3.505	2.082	0.361	7.030
HCE	2.565	1.913	-0.281	5.898
SCE	0.687	0.244	0.267	1.052
CEE	0.176	0.168	-0.094	0.488
lnBSIZE	2.158	0.270	1.609	2.773
NED	0.697	0.269	0.100	0.920
lnSSB	4.141	1.379	2.000	7.000
lnACS	1.230	0.187	1.099	1.609
Duality	0.141	0.349	0.000	1.000
lnFSIZE	14.383	1.676	10.787	16.836
Risk	47.098	20.903	4.369	77.986
SUB	6.188	6.980	0.000	20.000
Listing	0.477	0.501	0.000	1.000
BIG4	0.813	0.392	0.000	1.000
Region	0.469	0.501	0.000	1.000

***Notes*:** See Table 5.3 on page 171 for variable definitions.

In contrast, for corporate governance features, it can be seen that the sampled IFIs average board-size has a steady mean of 2.15 before and after the financial crisis, while

the mean of board-composition is 0.70, suggesting that NEDs remain on the majority of IFIs' boards. Size of Shariah supervisory board and size of audit committees (ACS) have means of 4.1 and 1.2 respectively at all times. Role duality has a mean of 0.14, suggesting that role duality is not common in the sampled IFIs.

Turning to the firm-related control variables, firm-size (FSIZE), and dummy variables i.e. listing-status, type of auditor (BIG4) and operating region, all are constant at all times. In this respect, BIG4 has a mean of 0.81, suggesting that majority of the sampled IFIs were audited by BIG4. Similarly, about half of the sampled IFIs (48%) had listing status and were operating in the Gulf region. On the other hand, the level of risk (leverage) increased from 39.32 (before the crisis) to 47.10 (after the crisis). Likewise, firm-complexity (measured by total number of existing subsidiaries) increased, also, from 5.88 before the crisis to 6.19 after the crisis.

8.2 Correlation Analysis

Two separate correlation analysis were performed on the sampled IFIs, controlling for the financial crisis. Table 7.2 (before the financial crisis) and Table 7.3 (after the financial crisis) present the correlations results between the dependent variables, ROA and Tobin's Q, and the independent variables. ROA related positively with VAIC before and after the crisis, indicating that efficiency in creating corporate value or the extent of corporate intellectual ability enhanced a firm's financial performance. Similarly, ROA was found to be related significantly with HCE and CEE in a positive direction. As for the market performance measure; Tobin's Q was associated significantly and positively with VAIC and its sub-components at all times with the exception of SCE where there was an insignificant relationship after the crisis.

Table 7.2

Correlation Matrix (Before Financial Crisis)

	ROA	***Tobin's Q***	***VAIC***	***HCE***	***SCE***	***CEE***	***lnBSIZE***	***NED***	***lnSSB***	***lnACS***	***Duality***	***lnFSIZE***	***Risk***	***SUB***	***Listing***	***BIG4***
Tobin's Q	0.1713															
VAIC	0.4351***	0.5037***														
HCE	0.5894***	0.4827***	0.8694***													
SCE	0.1805	0.4235***	0.7646***	0.5531***												
CEE	0.483***	0.413***	0.3764***	0.4333***	0.155											
lnBSIZE	0.1176	0.1574	0.1043	0.1926	0.0673	0.0824										
NED	-0.037	-0.0962	-0.1576	-0.1645	-0.1335	-0.0253	-0.3555***									
lnSSB	0.1246	0.0764	0.1069	0.1436	0.0778	0.0597	0.4795***	-0.1459								
lnACS	0.1283	0.146	0.1393	0.1276	0.1223	0.2027	0.1767	-0.1532	0.0885							
Duality	0.0783	0.1885	0.1046	0.1293	0.0274	0.1061	0.2056	-0.2179	0.1554	-0.0561						
lnFSIZE	0.3698***	0.4232***	0.3358***	0.3904***	0.1921	0.4554***	0.2282**	-0.0713	0.3283***	0.1897	0.1964					
Risk	0.0787	-0.014	0.0395	0.0738	-0.1275	0.4463***	0.1624	-0.0771	0.1179	0.1387	0.2063	0.2731				
SUB	0.2278	0.0873	-0.0538	-0.0025	-0.1063	0.191	0.0415	0.1074	0.1127	-0.1497	0.1764	0.2624**	0.0628			
Listing	0.2	0.277**	0.2219	0.2826**	0.0688	0.1845	0.2947***	-0.1643	0.2435**	-0.0518	0.123	0.264**	0.231**	0.3134***		
BIG4	-0.1275	-0.1001	-0.2916***	-0.3193***	-0.278**	-0.0739	-0.2465**	0.4744***	-0.1207	-0.0027	-0.2498**	-0.1881	-0.0364	0.0532	-0.015	
Region	-0.0327	-0.1033	-0.1285	-0.0936	-0.2539**	-0.067	0.0298	0.205	-0.0106	-0.2876**	-0.0839	-0.1026	-0.0136	-0.0566	0.2173	0.4512***

***Notes*:** *** p<0.01, ** p<0.05

Table 7.3

Correlation Matrix (After Financial Crisis)

	ROA	***Tobin's Q***	***VAIC***	***HCE***	***SCE***	***CEE***	***lnBSIZE***	***NED***	***lnSSB***	***lnACS***	***Duality***	***lnFSIZE***	***Risk***	***SUB***	***Lisitng***	***BIG4***
Tobin's Q	0.2842**															
VAIC	0.5827***	0.2629**														
HCE	0.6555***	0.3709***	0.9272***													
SCE	-0.1566	-0.0471	0.2799	0.1018												
CEE	0.617***	0.3948***	0.6579***	0.6875***	-0.121											
lnBSIZE	0.0887	0.2117	0.1402	0.162	-0.0714	0.1918										
NED	-0.2929	-0.0577	-0.3694***	-0.3577***	-0.1142	-0.302***	-0.3913***									
lnSSB	0.1309	-0.0185	0.0956	0.1416	-0.0197	0.0574	0.3804***	-0.1341								
lnACS	0.0163	0.036	-0.019	0.0303	-0.0592	0.0275	0.2033	-0.0594	0.1648							
Duality	0.1799	0.1874	0.1611	0.1946	-0.0331	0.0829	0.2065	-0.2205	0.1386	0.1079						
lnFSIZE	0.4021***	0.4309***	0.4151***	0.4851***	-0.0344	0.4511***	0.1427	-0.0438	0.2037	0.0516	0.1984					
Risk	0.3527***	0.0015	0.3084***	0.3525***	-0.095	0.478***	0.1952	-0.2026	0.1187	0.1362	0.1042	0.4056***				
SUB	0.1246	0.1214	-0.0902	-0.0752	0.0283	-0.052	0.0151	0.1551	0.147	-0.13	0.1055	0.2176	-0.1852			
Listing	0.3259***	0.4092***	0.1029	0.1725	-0.1681	0.1857	0.3521***	-0.2514**	0.2212	-0.0822	0.154	0.2018	0.1567	0.233**		
BIG4	-0.1419	-0.0391	-0.3725***	-0.3918***	-0.2134	-0.1352	-0.214	0.4693***	-0.184	0.0193	-0.2663**	-0.1674	-0.0824	0.0878	-0.0225	
Region	0.0561	0.0546	-0.039	-0.0487	-0.3154***	0.0907	0.0777	0.1283	-0.176	-0.2857**	-0.1098	0.0071	-0.0796	-0.0343	0.2008	0.4512***

***Notes*:** *** p<0.01, ** p<0.05

None of the governance-specific variables was found to be associated with the sampled IFIs' accounting and market-based performance either before or after the financial crisis. As for firm-specific variables, firm-size related positively and significantly with both sets of performance measures before and after the crisis whereas level of risk was associated significantly with ROA after the crisis. Likewise, listing status was found to be associated significantly with both ROA and Tobin's Q, after the crisis. Hence, no multicollinearity could be observed between the dependent and independent variables.

8.3 Multivariate Analysis

In order to test whether IC and CG features were associated significantly with the sampled IFIs' performance before and after the financial crisis, regression analysis was conducted using STATA 13.1. Two sets of regression models, representing two measures of firm performance, ROA and Tobin's Q, and as used in chapter 6, were repeated, controlling for the financial crisis[44]. The regression models were run to test hypothesis H4 that there existed no significant differences in the sampled IFIs' IC and CG performance before and after the financial crisis.

8.3.1 Accounting and Market Performance of IFIs Before the Financial Crisis

Equation 1 was replicated in order to examine the impact of VAIC and governance-specific characteristics on the sampled IFIs' accounting and market-performance of before the financial crisis.

Table 7.4 reports the results of the regression analysis based on ROA and Tobin's Q before the financial crisis. The association between the sampled IFIs' accounting-based performance of and VAIC and corporate governance and firm-specific features is discussed first. The *F* -value for pooled data was significant at the 1% level for all Models except for Model 1b which was significant at the 5% level. The adjusted R^2 ranged from 11% to 36% for all Models. Focusing first on the results of

[44]Regression results for 2009 are provided in Appendix 7.1. The comparative analysis suggested no significant differences in the sampled IFIs' accounting and market-based performance of in years 2009 and 2010. Therefore, 2009 was excluded from the analysis.

Model 1, as reported in the second column of Table 7.4, the estimated coefficients for VAIC were positively and statistically significant with ROA at the 1% level, thereby suggesting that a higher VAIC improved the sampled IFI's profitability.

Model 1a examined the association between the sampled IFIs' accounting-based performance, before the financial crisis and HCE. Model 1a's results, as reported in the third column of Table 7.4, indicated a positive and significant relationship at the 1% level between HCE and ROA. Likewise, Model 1c's results, as reported in the fifth column of Table 7.4, suggested a positive and significant relationship at the 1% level between CEE and ROA. Therefore, consistent with the perception, the estimates indicated that strong HC and CE efficiency had a positive effect on the sampled IFIs' profitability of before the crisis.

Table 7.4

Cross-sectional OLS Regression of ROA and Tobin's Q before-crisis

	Model 1	***Model 1a***	***Model 1b***	***Model 1c***	***Model 2***	***Model 2a***	***Model 2b***	***Model 2c***
	ROA	**ROA**	**ROA**	**ROA**	**Tobin's Q**	**Tobin's Q**	**Tobin's Q**	**Tobin's Q**
Constant	-5.694*	-4.213	-6.328*	-3.035	-0.479	-0.364	-0.689*	-0.174
VAIC	0.425***				0.0558***			
HCE		0.720***				0.0561***		
SCE			1.389				0.469***	
CEE				6.926***				0.794***
lnBSIZE	0.144	-0.114	-0.0501	0.0571	0.0997	0.0683	0.0780	0.0862
NED	0.241	0.0621	0.295	0.249	0.00626	-0.00283	0.00582	0.00865
lnSSB	-0.0145	0.00831	-0.0275	0.0375	-0.0252	-0.0241	-0.0270*	-0.0194
lnACS	1.257	1.097	1.620*	0.956	0.0423	0.0527	0.0771	0.0150
Duality	-0.177	-0.196	-0.0969	-0.0139	0.111**	0.114**	0.121***	0.131***
lnFSIZE	0.243	0.138	0.368**	0.182	0.0600**	0.0605**	0.0688***	0.0557**
Risk	-0.000308	0.000823	-0.00131	-0.0186*	-0.00226*	-0.00237*	-0.00185	-0.00442***
SUB	0.0715***	0.0757***	0.0578**	0.0340	-0.00199	-0.00282	-0.00214	-0.00665**
Listing	-0.0560	-0.301	0.258	0.317	0.101**	0.105**	0.122**	0.151***
BIG4	-0.315	0.0558	-0.682	-0.653	0.118	0.122	0.0923	0.0715
Region	0.404	0.328	0.462	0.290	-0.0709	-0.0798	-0.0404	-0.0849
N	128	128	128	128	128	128	128	128
Adjusted R^2	0.221	0.364	0.114	0.249	0.346	0.317	0.321	0.338
R-squared	0.295	0.4238	0.1977	0.3198	0.4082	0.3819	0.3849	0.4007
F-Value	4.68***	6.17***	2.99**	3.06***	8.10***	6.26***	8.65***	9.09***

***Notes*:** *** p<0.01, ** p<0.05

Finally, Model 1b's results, as reported in the fourth column of Table 7.4, showed no significant relationship between SCE and the sampled IFIs' accounting performance of, based on ROA. In contrast, before the financial crisis, none of the corporate governance-related variables were related to ROA. The impact of VAIC and CG characteristics on the sampled IFIs' market performance was analyzed, also. Table 7.4 reports the results of the regression analysis based on Tobin's Q before the financial crisis. The *F* -value was significant for all models at the 1% level while the adjusted R^2 ranged from 32% to 35%. Consistent with the sampled IFIs' accounting-based performance, the estimates indicated that VAIC was associated positively with the sampled IFIs' market valuations since, in the first regression specifications, the coefficient estimates for VAIC were positive and statistically significant at the 1% level before the crisis. Similar results can be observed for the sub-components of VAIC; these showed that, at the 1% level before the crisis, a positive and significant relationship between Tobin's Q and variables HCE, SCE, and CEE respectively. Among the governance-related variables, role duality related positively with Tobin's Q at 5% level of statistical significance. On the other hand, firm-size and listing status, which were firm-related variables, related positively with Tobin's Q at the 5% level.

8.3.2 Accounting and Market Performance of IFIs After the Financial Crisis

Table 7.5 reports the results of the regression analysis based on ROA and Tobin's Q after the financial crisis. Model 1 examined the association between the sampled IFIs' accounting-based performance and VAIC and CG as well as firm-specific features. The *F*-value was significant at the 1% level for all models while the adjusted R^2 ranged from 29% to 50%.

As before, focusing first on Model 1's results, as reported in the second column of Table 7.5, the estimated coefficients for VAIC were positively and statistically significant with ROA at the 1% level, thereby suggesting that higher VAIC improved an IFI's profitability. Model 1a examined the association between the sampled IFIs' accounting-based performance after the financial crisis and HCE. Model 1a's results, as reported in the third column of Table 7.5, indicated a positive and significant relationship at the 1% level between HCE and ROA. Likewise, Model 1c's results, as reported in the fifth column of Table 7.5, suggested a positive and significant

relationship at the 1% level between CEE and ROA. Therefore, consistent with the perception, the estimates indicate that strong HC and CEE had a positive effect on the sampled IFIs' profitability after the financial crisis. Finally, Model 1b's results, as reported in the fourth column of Table 7.5, showed no significant relationship between SCE and the accounting-based performance measure, ROA. Among corporate governance-related variables board size related to ROA at the 5% level after the financial crisis. However, the negative direction suggested that larger boards were subject to higher expenses and these were reflected negatively in the financial performance. As for firm-related variables, listing status was associated significantly with ROA at the 5% level; this suggested that listing had become one of the prominent features in explaining the sampled IFIs' accounting performance after the crisis.

Table 7.5

Cross-sectional OLS Regression of ROA and Tobin's Q after-crisis

	Model 1	***Model 1a***	***Model 1b***	***Model 1c***	***Model 2***	***Model 2a***	***Model 2b***	***Model 2c***
	ROA	ROA	ROA	ROA	Tobin's Q	Tobin's Q	Tobin's Q	Tobin's Q
Constant	-2.374	-1.033	-0.767	-0.0568	-0.688***	-0.602***	-0.675**	-0.471**
VAIC	0.506***				0.0259*			
HCE		0.672***				0.0467***		
SCE			-1.124				0.00688	
CEE				6.400***				0.652***
lnBSIZE	-1.519**	-1.342**	-1.800**	-1.810***	0.210*	0.228**	0.195*	0.196**
NED	-1.142	-1.172*	-2.311***	-1.171*	0.111	0.128	0.0597	0.160*
lnSSB	0.0684	0.0493	0.0625	0.113	-0.0506***	-0.0520***	-0.0504***	-0.0462***
lnACS	0.949	0.598	0.579	0.734	0.0294	0.00803	0.0223	0.0158
Duality	0.253	0.208	0.204	0.427	0.0681	0.0649	0.0688	0.0855**
lnFSIZE	0.0771	-0.00317	0.307**	0.0862	0.0797***	0.0701***	0.0910***	0.0695***
Risk	0.0184*	0.0163*	0.0226*	0.00798	-0.00462***	-0.00487***	-0.00432***	-0.00597***
SUB	0.0513*	0.0559**	0.0415	0.0409	-0.00546*	-0.00494	-0.00605*	-0.00595*
Listing	0.867**	0.681*	0.710*	0.784**	0.237***	0.226***	0.233***	0.233***
BIG4	0.289	0.552	-0.381	-0.287	0.114*	0.144**	0.0811	0.0885
Region	0.428	0.358	0.492	0.358	-0.105*	-0.115**	-0.0920*	-0.125**
N	128	128	128	128	128	128	128	128
Adjusted R^2	0.440	0.499	0.287	0.440	0.391	0.429	0.365	0.467
R-squared	0.4929	0.5463	0.3543	0.4932	0.4486	0.4833	0.4254	0.5175
F-Value	11.51***	15.77***	8.42***	13.03***	12.67***	13.73***	9.45***	17.70***

***Notes*:** *** p<0.01, ** p<0.05

Table 7.5 reports, also, the results of the regression analysis based on Tobin's Q after the financial crisis. Model 2 examined the association between the sampled IFIs' market-based performance and VAIC and CG as well as firm-specific features after the crisis. The *F* -value for pooled data was significant for all models while the adjusted R^2 ranged from 37% to 47%. Unlike the results observed before the financial crisis, VAIC was found to have a positive ($p < 0.10$) and significant relationship with market performance. Likewise, the analysis suggested a positive and significant relationship between HCE (The results are reported in the seventh column of Table 7.5.) and CEE (The results are reported in the ninth column of Table 7.5.) at the 1% level. However, Model 2b's results, as reported in the eighth column of Table 7.5, showed no significant relationship between SCE and Tobin's Q.

In governance-related variables, size of SSB was related in the negative direction to Tobin's Q at the 1% level. Among firm-specific control variables, firm-size and listing status were associated positively with Tobin's Q at the 1% level while level of risk relates negatively with Tobin's Q at the 1% level.

8.4 Discussion of Findings

Overall, the results depicted that IC efficiency affected the sampled IFIs' performance at all times. Consistent with the previous literature, this finding indicated that generally IC improved profitability and had, also, a positive effect on market valuation. Thus, consistent with the research hypothesis, the results suggested that the financial crisis might have spurred on IC's impact on the sampled IFIs' growth and profitability and their potential market share even further. Consequently, hypothesis 4 was supported. As for the CG mechanism, the analysis suggested some variations in the directional signs of some CG-features before and after the financial crisis for both sets of performance measures. However, CG-related variables were not found to be related significantly to both sets of performance measures.

However, it should be noted that this finding was broadly consistent with do Rosário Cabrita and Vaz's (2005) and Yalama and Coskun's (2007) findings in the pre-crisis period and with Ting and Lean's (2009) and Muhammad and Ismail's (2009) findings in the post-crisis period; they documented that IC attributes were associated positively with the financial performance of conventional banks. Equally, the sampled

IFIs' sustained market-based performance, before and after the crisis, endorsed Youndt et al.'s (2004) and Adams and Santos' (2006) findings before the crisis whereas the observed results of the aftermath of the market meltdown agreed with Wang (2008) and Zéghal and Maaloul (2010) who posited that IC had a strong impact on the competitive advantage and market capitalization.

The analysis of the sampled IFIs' accounting and market-based performance before and after the financial crisis suggested no significant differences. However, it can be seen that IC's effect of IC on the sampled IFIs' accounting-based performance was strong and consistent at all times i.e. before and after the crisis. On the other hand, the IC's effect on the sampled IFIs' market-based performance was influenced by the recent crisis.

The analysis of sub-components of IC suggested that strong CEE and HCE played a pivotal role in determining the sampled IFIs' financial and market-based performance before and after the crisis. Financial and physical capital (measured by CEE) is important at all times for IFIs, because, in the event of unanticipated needs, they have no access to the financial market. The Islamic banking industry is comparatively smaller than their conventional rivals as are the IFIs which engage mainly in relationship lending. As suggested by Ongena and Smith (2001), long-term bank borrower relationships are crucial for building banking relationships to create value[45]. This means that relationship borrowers gravitate toward high-capital banks (Berger and Bouwman, 2013), because higher capital leads to a higher profitability and higher probability means survival at all times. Likewise, HCE played a pivotal role in determining at all times the sampled IFIs' financial health and market-valuation. The results corroborate human IC as being the precursor for an IFI's intellectual wealth. In other words, with the development of human IC, an IFI's ability to merchandise and improve its IC results in higher profitability and market valuation. These findings are in line with the suggestion of Colombo and Grilli (2005) that firms with greater human IC (i.e. higher education or skill) were likely to have better entrepreneurial judgment at all times. Furthermore, this finding is consistent with the earlier studies in the financial sector (Goh, 2005; Mavridis and Kyrmizoglou, 2005; Mention and Bontis, 2013), who

[45]Bae et al. (2002) reported similar results after examining the value of durable bank relationships during the 1997–1998 Korean banking crisis.

reported that human IC contributed both directly and indirectly to business performance in the banking sector.

On the other hand, consistent with earlier research (Aebi et al., 2012; Beltratti and Stulz, 2012; Fahlenbrach and Stulz, 2011), there was observed either no significance or even a negative relationship between CG variables and the sampled IFIs' performance at all times i.e. pre- and post- the financial crisis period. However, there can be seen interesting changes in the signs and statistical significance.

Board-size (BSIZE) related negatively and significantly with Tobin's Q at the 5% level. This implied that tough large BSIZE associated positively with ROA; however, the market perceived larger boards to be expensive. Another significant difference can be observed for the size of the Shariah supervisory board; this related negatively with ROA at the 1% level of significance after the financial crisis, suggesting that the sampled IFIs' with large board-size received sufficient advisory services and, hence, required relatively less Shariah supervision.

Hence, the results indicated that the standard corporate governance measures, suggested by the extent literature on corporate governance and its value effects, might fall short in explaining the IFIs' relevant governance structures. Specifically, the results highlighted that the classical model of corporate governance, which is a westernised concept, could not be applied to all types of financial intermediaries i.e. Islamic financial institutions.

Turning to the firm-related control variables, it can be noted that some variables became significantly more important in determining the IFIs' profitability and market valuation. Specifically, firm-size (FSIZE), and listing status were associated positively, while, after the crisis, level of risk related negatively with ROA at the 1% level. This suggested that sampled IFIs' accounting performance increased with FSIZE and listing status and declined with higher leverage. These findings are consistent with the earlier studies (Peni and Vähämaa 2012), conducted in the context of conventional finance. Similarly, after the crisis, listing-status and level of risk related with Tobin's Q at the 5% level; this suggested that the sampled IFIs' market valuations increased after becoming listed.

Given this study's divergent nature which provided evidence from an ignored, yet, potential area of research i.e. Islamic banking and finance, the observed findings

have sensible economic interpretations. Firstly, higher IC efficiency helped the sampled IFIs to improve their odds of survival at all times i.e. before and after the crisis. Secondly, higher IC efficiency helped the sampled IFIs to maintain their profitability i.e. ROA and market valuation at all times. Arguably, IC is the main line of defence for IFIs against negative shocks. In contrast, the insignificant results for CG mechanisms suggest that the westernised concept of CG does not fit with the ideology upon which Islamic finance is grounded. Consistent with the results observed in chapter 6, it is argued that IFIs are based on trust and, hence, such institutions require relatively less monitoring. This argument is in line with the stewardship theory literature (Donaldson, 1990; Donaldson and Davis, 1991; Davis et al., 1997) which assumes that managers are good stewards of corporations by acting in the best interests of their principals and which, ultimately, results in boosting a firm's performance.

8.5 Chapter Summary

Empirically, this chapter examined the effects of IC and CG features on the sampled IFIs' performance of before and after the financial crisis. In order to ensure that the analysis captured in a comparable way the effects of IC- and CG-efficiencies on the sampled IFIs' performance of , two different time periods, referred as pre-crisis (2007-2008) and post-crisis (2010-2011) were used. The IC efficiency and CG-mechanism of the sampled IFIs were measured before the financial crisis because it was unknown a priori when a crisis would strike. The interesting question was whether going into a crisis IFIs, which possessed higher stock of IC and strong CG-features, would benefit from these higher IC stocks and strong CG-mechanism during a crisis. Likewise, the IC efficiency and CG-features of the sampled IFIs were measured after the financial crisis to benchmark the observed results.

Overall, the results depicted a positive relationship between IC (measured by VAIC) and the sampled IFIs' accounting performance based on ROA. Likewise, a positive relationship between IC and the sampled IFIs' market performance, based on Tobin's Q, was observed at all times. However, a reduction in statistical significance implied that the relationship between the sampled IFIs' IC and market-based performance had weakened after the crisis. However, the analysis suggested that although the financial crisis did hit the sampled IFIs hard and shook the foundations of

the centuries old conventional financial system across the globe, specifically, IFIs with strong IC did not perform equally poorly. In other words, higher IC efficiency helped IFIs to maintain their profitability i.e. ROA and market valuation at all times i.e. before and after the financial crisis. Arguably, IC is the main line of defence for IFIs against negative shocks. As for CG measures, the analysis suggested some variations in the directional signs of some CG-features before and after the financial crisis for both sets of performance measures. However, in general, CG-related variables were not found to be related significantly to both sets of performance measures,.

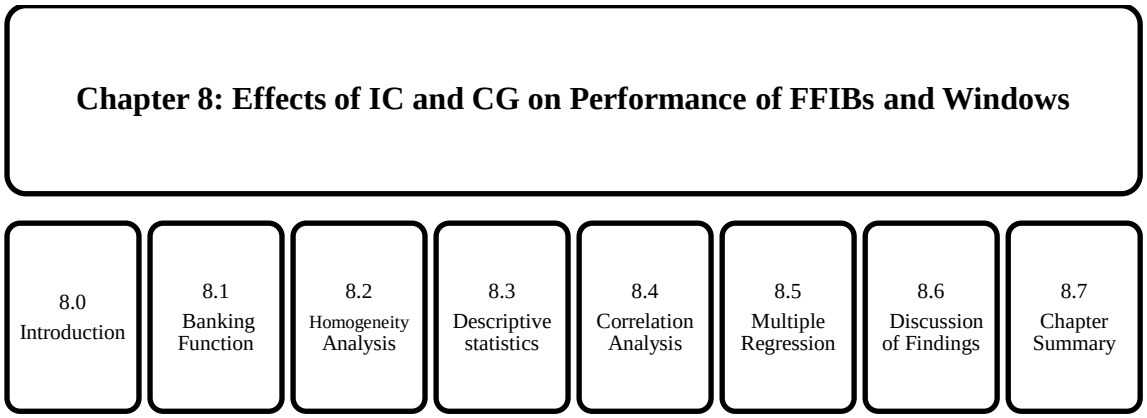
Despite, shallow statistical evidence being observed for corporate governance-related variables, the overall results suggested that the financial crisis might have spurred on IC's impact on the sampled IFIs' growth and profitability of and their potential market share even further. These results supported generally the hypothesis that IC helped IFIs' to survive. Equally, the results suggested that the classical model of corporate governance, grounded on the westernised concept of monitoring, did not fit necessarily with all sorts of financial intermediaries. Specifically, Islamic finance is based on trust and, hence, requires less monitoring. Therefore, a radical departure from existing orthodox corporate governance model is suggested, particularly for IFIs.

As argued earlier in Chapter 4, the Islamic finance industry is not homogeneous and not all banks offering Shariah-compliant products are FFIBs. Hence, these banks possess different resources both IC and physical resources. Equally, these banks follow different models of corporate governance and, consequently, pursue different objectives and achieve different levels of performance. Against this background, the next chapter (Chapter 8) performs a comparative analysis by dividing the sample IFIs into FFIBs and Windows.

Chapter 9: Effects of Intellectual Capital and Corporate Governance Features on Performance of Full-fledged Islamic Banks vs. Islamic Shariah-windows

8.0 Introduction

This chapter reports the findings for this study's third research objective which was to investigate, for the period 2007-2011, the effects of IC efficiency and CG characteristics on the performance of FFIBs and Windows, while controlling for firm-specific characteristics.



The chapter is organized as follows. Section 8.1 explains the banking function process. Section 8.2 performs the Homogeneity Analysis of IFIs. Section 8.3 presents the descriptive statistics of the variables employed in the regression models. Section 8.4 presents the results of the correlation analysis for both sets of IFIs. Section 8.5 reports the results of the multiple regression models followed by a discussion of the findings in section 8.6. Finally, section 8.7 presents the summary of the chapter.

9.1 Banking Function Process

Before performing the comparative analysis of FFIBs against Windows, it is imperative to delineate clearly the approaches to explaining the banking function process. The economic production approach and intermediation approach are two approaches which are widely used to clarify the banking function process.

The former refers to the production of services provided to depositors and borrowers by the financial institutions. The classical production factors which are, namely, land, labour and capital, are used as inputs to produce desired outputs. In the economic production[46] approach, a bank is viewed as the producer of loan and deposit services using the said economic resources, labour and capital. Whereas the modern empirical research on the banking efficiency is based on the latter –the intermediation approach was suggested by Sealey and Lindley (1977).

In fact, the intermediation approach complements the economic production approach. In the intermediation approach, a bank is viewed as an intermediary financial institution which offers financial services. It collects funds from depositors and purchases funds with the assistance of labour (human IC) and capital and transforms these generated funds into loans and other financial assets. In other words, deposits, held by the bank, labour and capital are all treated as inputs while the volumes of earning assets are defined as measures of output.

The intermediation approach is suggested by the extant literature to be more appropriate for evaluating financial institutions; the reasoning is that the approach may be superior for evaluating the importance of frontier efficiency for the profitability of financial institutions since the minimisation of total costs and not only production costs are needed to maximise profits (Iqbal and Molyneux, 2005). Moreover, the intermediation approach is inclusive of interest and/or funding expenses; often these account for between one-half and two-thirds of total costs (Mohamad et al., 2008).

The basic assumption, underlying the conventional banking theories, is that banks accept deposits at a lower interest rate and resell those deposited funds to those seeking funds for economic activities at a higher interest rate. Therefore, the banks earn profit based on their competitive advantage at gathering information and underwriting

[46]Sealey and Lindley (1977, p. 1252), defined the technical process of production as "the process of transformation, directed by human capital, which is considered desirable by some individuals. Transformation means that certain goods and/or services (inputs) enter into a process in which they 'lose their identity, i.e., cease to exist in the original form,' while other goods or services (outputs) are generated. The transformation process for a financial firm involves the borrowing of funds from surplus spending units and lending those funds to deficit spending units, i.e., financial intermediation. The depository financial firm's output in a technical sense is, thus, a set of financial services to the firm's depositors (creditors) and borrowers".

risk (Santos 2001). Hence, in conventional banking system, profits are derived mainly from the spread between the interest rates i.e. the interest rate received from the capital borrowers and the interest rate paid to depositors.

Here, the contention is that IFIs perform the same intermediary function with the exception of a predetermined interest rate. In other words, IFIs do not receive or pay a predetermined or prefixed interest rate. Instead, profits are earned through investments in different projects and shared on the basis of agreements between depositors and borrowers. Based on similar assumptions, the removal of pre-fixed interest payment or receipt in the financial transactions, IFIs offer a range of fee-based baking services which are similar to those of conventional banks.

Consequently, Islamic banking is considered to be a different banking stream since the whole phenomenon of Islamic banking is based on the intellectual ideology of Shariah, the Islamic religious law which guides Islamic Economics. Under Shariah, IFIs are duty-bound: 1) not to charge interest payments; 2) not allowed speculating; and 3) are prohibited from financing specific illicit activities. Furthermore the risk sharing principle and real economic transactions, backed by tangible assets, suggest clear differences in the funding and activity structures of Islamic and conventional financial institutions (Kettell, 2011; Beck et al., 2013; Nawaz, 2013a; Nawaz, 2013b).

Carvallo and Kasman (2005) noted that the liberalisation of financial markets was on a global scale. The IT revolution and an upward trend in using advanced technologies are all factors which have put competitive pressure on financial institutions and banks in particular. Banks, operating, in the emerging economies, are facing this pressure particularly since they constitute the main financial intermediaries to channelling savings and investments. In this context, the competitive advantage is enhanced if banks can function efficiently (Mohamad et al. 2008).

Parenthetically, conventional financial institutions (hereafter referred to as CFIs) are enjoying several advantages over the IFIs. For instance, CFIs have a proven track in offering banking solutions on a global scale; enjoying huge sums of capital; and have more expertise along with advanced technologies when compared to IFIs. Despite the odds, Islamic banking is one of the fastest growing segments in contemporary finance (Schoon, 2010; Ernst and Young, 2013). Given the robust growth of the Islamic finance industry, many leading conventional banking groups i.e. Citibank, HSBC, Standard

Chartered bank etc. have made their way to the Islamic way of banking. As a consequence, the number of financial institutions, offering Shariah-compliant products, has increased causing competition within the Islamic finance industry. Correspondingly, many empirical studies examined the efficiency of conventional and Islamic banks and documented that IFIs were more efficient than their conventional counterparts. Nonetheless, the evidence in this regard remains inconclusive.

The existing literature seemed to establish substantial differences in performance efficiency between conventional and IFIs (see Chapter 3). Some studies compared the efficiency of conventional banks in one country while others made a across border comparative analysis between the conventional banking sectors. Similarly, some researchers continued to focus on the IFIs' performance of alone while others made a comparative analysis between conventional and IFIs as well among the IFIs. Studies, which compared the conventional and Islamic banks, tried to highlight the differences in the efficiency of both banking models. However, the empirical evidence is inconclusive to establishing these differences and, consequently, there is still a lively debate in the literature.

An interesting element, missing in these studies and particularly those concerning IFIs is that, so far, none of these studies verified the homogeneity of the Islamic finance industry. This study contributes to the existing body of literature by: 1) analysing the homogeneity of the Islamic finance industry; and 2) examining and comparing the performance of different Islamic banks operating within the Islamic finance industry. In the following section, the homogeneity test is performed firstly on the sample IFIs. It is established that the Islamic finance industry is not homogeneous as such since there exists a distinction among the sample IFIs. Secondly, regression analysis is performed on the newly classified sets of Islamic banks in order to determine the differences in performance within the industry.

9.2 Homogeneity Analysis of Islamic Financial Institutions

There were 64 IFIs used as sample in this study. The data for this study was derived mainly from BankScope, a global database with data on both listed and non-listed banks being conventional or Islamic. The selected IFIs were identified as "*Islamic Banks*" in the BankScope database; this meant that all these IFIs' operations of were Shariah-

compliant. However, a cursory look at the selected sample indicates some differences, suggesting that the Islamic finance industry is not homogeneous and, as such, there lies a distinction within the industry. In other words, all the sampled IFIs were perceived wrongly to be FFIBs on the BankScope database.

In order to support the extended argument with empirical evidence, the sampled IFIs were sub-classified into FFIBs and Windows[47]. The former refers to a full service intermediary financial institution which conducts its business in accordance with the Shariah and, as such, does not deal simultaneously in conventional banking business. Whereas, subsumed under the latter, are all those extended hands of various conventional banking groups which offer Islamic finance services alongside conventional banking as their core business.

The classification was developed after examining carefully the profile of each of the sampled IFIs. Each IFI's core business activity was verified by using annual reports, BankScope database, respective websites, social contacts, and several other publically available resources. Under the new classification, the total number of sampled IFIs remained unchanged; however, 39 banks were sorted as FFIBs and 27 banks were sorted as Windows.

As established earlier, the business model of the Islamic way of banking is based on Shariah (the legal code of Islamic jurisdiction). This guides Islamic Economics whereas the traditional conventional banking model is based on different ideologies and pursues different goals i.e. profit maximization. Simplifying and relating the argument to the present classification of IFIs, it was reasoned that the FFIBs came into being to offer Shariah-compliant financial solutions to those looking for investment opportunities while not violating their religious beliefs. Another factor, which emerges here, is that the prominent conventional banking groups came into this business through their extended hands i.e. Shariah-windows after realizing the fact that they were on the verge of losing their clients in certain regions, such as the Gulf, where these conventional banks had track records of providing banking services for more than a century, way before the birth of Islamic banking.

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[47]Citi-Islamic, HSBC-Amanah, and Standard Chartered-Saadiq are some of the prominent examples of *Windows*; these are wholly owned subsidiaries of Citi Group, HSBC, and Standard Charted Bank respectively.

Moreover, significant differences in the controlling and monitoring (governance) mechanisms of both sets of IFIs are apparent, also, and worth analysing. Additionally, from an Islamic standpoint, governance is to achieve social equality and to create more value for the society at large, while the conventional governance model focuses on the maximization of wealth for shareholders. In other words, borrowing from the agency theory of the firm, it is argued that the conventional banking model is based on the central assumption of self-interests of individuals who tend to maximize their own returns by all means available to the firm. This might result in conflicts between both parties, known as the agency problem (Eisenhardt, 1989; Baiman, 1990; Kunz and Pfaff, 2002). However, FFIBs are not expected to suffer to the same extent due to the trust factors among the parties involved in business. In summary, the operating mechanism of conventional and Islamic banking system is significantly different from one another. Accordingly, the IC stock including human capital, structural capital and capital employed is, also, somewhat different in nature for both sets of IFIs.

Taken the significance of the arguments together, both sets of IFIs are expected to utilize their resource bases i.e. IC, physical, and financial resources differently and, as a consequence, to achieve different levels of performance. Hence, the performance of all the resources of these institutions (i.e. FFIBs and Windows) was measured and compared to ascertain the existence of performance differences between the two sets of IFIs. Therefore, the hypothesis, to be tested here, is that there exists a significant difference in the IC and CG performance of FFIBs and Windows.

Since the classification of the sampled IFIs into FFIBs and Windows was established, the next step was to apply various statistical techniques to analyse the data in order to collect empirical evidence in support of the research hypothesis. Therefore, the following section provides the empirical results and analysis of the data. The main elements, discussed in the following sections, are the descriptive statistics, the correlation analysis and the regression analysis.

9.3 Descriptive Statistics

Table 8.1 presents the descriptive statistics for selected firm characteristics including mean, standard deviation, minimum and maximum for FFIBs (Panel A) and Windows (Panels B) for all the dependent and independent variables used in the model for the five year pooled data.

Table 8.1

Descriptive Statistics of Performance Measures and Continuous Independent Variables

	Panel A: Full-fledged Islamic Banks (FFIBs)				***Panel B: Shariah Windows (Windows)***			
	Mean	*Std. Dev.*	*Min.*	*Max.*	*Mean*	*Std. Dev.*	*Min.*	*Max.*
N	185	185	185	185	135	135	135	135
ROA	0.413	2.492	-3.810	3.809	1.013	2.164	-3.810	3.809
Tobin's Q	0.804	0.284	0.245	1.126	0.865	0.258	0.245	1.126
VAIC	3.961	1.938	0.361	7.030	3.876	2.130	0.361	7.030
HCE	2.949	1.804	-0.281	5.898	2.929	1.917	-0.281	5.898
SCE	0.706	0.210	0.267	1.052	0.688	0.231	0.267	1.052
CEE	0.193	0.162	-0.094	0.488	0.188	0.148	-0.094	0.488
lnBSIZE	2.231	0.284	1.609	2.773	2.038	0.233	1.609	2.565
NED	0.657	0.279	0.1	0.92	0.751	0.238	0.1	0.92
lnSSB	4.611	1.489	2	7	3.452	1.084	2	6
lnACS	1.207	0.162	1.099	1.609	1.241	0.203	1.099	1.609
Duality	0.114	0.318	0	1	0.185	0.390	0	1
lnFSIZE	14.424	1.519	10.787	16.836	14.276	1.611	10.787	16.836
Risk	43.951	21.589	4.369	77.986	40.520	22.147	4.369	77.986
SUB	5.292	6.653	0	20	7.044	7.069	0	20
Listing	0.454	0.499	0	1	0.519	0.502	0	1
BIG4	0.811	0.393	0	1	0.815	0.390	0	1
Region	0.568	0.497	0	1	0.333	0.473	0	1

Notes: See Table 5.3 on page 171 for variable definitions.

Focusing first on the dependent variables, it can be seen that the overall financial performance of the sampled FFIBs was sound as indicated by ROA with a mean of 0.41. However, the mean accounting performance of Windows was far higher (1.01) than FFIBs. This implied that Windows outperformed FFIBs in accounting based

performance and, on average, offered higher returns on assets during the period under study. Equally, for FFIBs and Windows, the market based performance measure, Tobin's Q, had a means of 0.80 and 0.87 respectively; this indicated that generally investors valued the sampled IFIs in excess of the book value of net assets as reported in the financial statements with Windows having slightly higher scores of Q-ratio than FFIBs.

As for the continuous independent variables, it can be seen that the average means of 3.96 and 3.88 for VAIC) suggests that during the period 2007~2011 both FFIBs and Windows were generally efficient in generating value from their IC and physical capital base. The descriptive statistics, related to the independent variables, indicate that HCE, SCE and CEE have positive means with FFIBs having a slightly higher average. The analysis reveals that, although Windows offered higher return on assets and maintained slightly higher market valuation, FFIBs were still more efficient in creating value by utilizing their IC and financial capital during the study period.

As for the governance-specific variables, it can be observed that the board characteristics of FFIBs and Windows are not identical. For instance, the average BSIZE for FFIBs was 2.23 and, for Windows, BSIZE was 2.04. Similarly, the average size of the Shariah supervisory board had means of 4.61 and 3.45 for FFIBs and Windows respectively. This implies that, on average, FFIBs have larger boards than Windows. Role duality had means, also, of 11% for FFIBs against 19% for Windows. In terms of board composition, the mean percentages of NEDs on the boards of FFIBs was 66% while, for Windows, the average stood at 75%; this indicated that, comparatively, Windows tended to have higher fraction of NEDs on their boards. The average size of audit committee for Windows was higher with a score of 1.24 than a mean of 1.21 for FFIBs.

As for the firm-specific control variables, on average, firm size and type of auditor had similar results for both sets of IFIs. FFIBs had a higher average of leverage and lower number of existing subsidiaries than Windows. More than 50% of the sampled Windows were listed while only 45% of FFIBs were found to have listing status; this suggested that listing was a more important element for Windows. Lastly, the analysis indicated that most of the FFIBs were based in the Gulf region while Windows operated mainly in regions other than the Gulf.

9.4 Correlation Analysis

Correlation analysis for both sets of IFIs i.e. FFIBs and Windows is performed separately in the following section.

9.4.1 Correlation Analysis of Full-fledged Islamic Banks

Firstly, the results of the correlation analysis of FFIBs are summarised in Table 8.2. The correlation analysis showed that for accounting performance measures under the Pearson's correlation; ROA related positively with VAIC with a value of 0.62. Similarly, ROA related positively with HCE (0.72) and CEE (0.60). Whereas, for the market performance measure; Tobin's Q associated positively with VAIC (0.48), HCE (0.50), and CEE (0.49) respectively. Similar to the ROA for accounting-based performance measure; SCE was not correlated significantly with Tobin's Q.

A cursory look at Table 8.2 reveals, also, that there were significant interactions between performance measures and governance-specific variables. Board-size related positively to both measures of performance while size of the Shariah supervisory board and role duality related only significantly to FFIBs' accounting performance of at the 1% and the 5% level respectively. Firm size, which was measured as the natural logarithm of total assets, was the only firm-specific variable associated with both measures of performance. Likewise, listing status correlated with both performance measures.

Table 8.2

Correlation Analysis of Full-fledged Islamic Banks

	ROA	***Tobin's Q***	***VAIC***	***HCE***	***SCE***	***CEE***	***lnBSIZE***	***NED***	***lnSSB***	***lnACS***	***Duality***	***lnFSIZE***	***Risk***	***SUB***	***Listing***	***BIG4***
Tobin's Q	0.2617***															
VAIC	0.617***	0.481***														
HCE	0.7133***	0.5023***	0.8966***													
SCE	-0.079	0.086	0.3682***	0.137												
CEE	0.5995***	0.4882***	0.571***	0.6167***	-0.089											
lnBSIZE	0.2426***	0.3292***	0.2745***	0.3594***	-0.0447	0.2632***										
NED	-0.1546	-0.0918	-0.1391	-0.1535	-0.0507	-0.1749	-0.3703***									
lnSSB	0.2583***	0.0816	0.2365**	0.3055***	-0.0397	0.1124	0.3521***	-0.1311								
lnACS	0.1025	0.1637	0.1631	0.1742	0.0198	0.2236**	0.3051***	-0.0921	0.0558							
Duality	0.2157**	0.1214	0.2211**	0.2564***	0.0237	0.0139	0.3392***	-0.203**	0.2888***	0.1578						
lnFSIZE	0.4055***	0.5605***	0.4696***	0.5458***	-0.0281	0.4082***	0.2614***	-0.0603	0.3258***	0.1343	0.2071**					
Risk	0.1578	0.0168	0.1753	0.2308**	-0.218**	0.4184***	0.2539***	-0.14	-0.0084	0.0761	0.1534	0.1374				
SUB	0.2247	0.1591	0.0508	0.0924	0.111	0.0129	-0.0126	0.0258	0.2024**	-0.0371	0.1563	0.2634***	-0.0953			
Listing	0.2751***	0.2164**	0.1005	0.1766	-0.1635	0.1419	0.5228***	-0.34	0.2902***	0.0359	0.187	0.3366***	0.286***	0.2593***		
BIG4	-0.1169	-0.0819	-0.29***	-0.3104***	-0.2677***	-0.0862	-0.4435***	0.6145**	-0.3125***	-0.0097	-0.2622***	-0.0596	-0.0501	-0.0037	-0.1139	
Region	0.0147	0.0466	-0.1369	-0.0778	-0.3829	-0.039	-0.0157	0.3685***	-0.1259	-0.1384	-0.0316	0.2172**	0.016	-0.08	0.1386	0.5534***

Notes**:** *** p<0.01, ** p<0.05

9.4.2 Correlation Analysis of Shariah-windows

Secondly, the correlation analysis of Windows was performed separately. The results of the correlation analysis are summarised in Table 8.3. The correlation analysis showed that, for accounting performance measures under the Pearson's correlation, ROA related positively with VAIC with the value of 0.50. Similarly, ROA related positively with HCE (0.59) and CEE (0.53). In contrast, HCE related with Tobin's Q at the 5% level of significance. Strikingly, unlike the results observed for FFIBs, the relationship between SCE and Tobin's Q was significant at the 1% level for Windows.

On the other hand, among corporate governance-features, role duality was the stand alone variable which was significant with Windows' market-based performance of at the 5% level; suggesting that the sampled Windows' market value of increased by combining the authoritative roles of CEO and board's chairperson. In firm related characteristics, firm size was associated significantly with both performance measures. The level of risk related significantly with ROA and listing status correlated with Tobin's Q at the 1% level. The relationships between the variables under study changed when controlling for bank type, being FFIBs or Windows. However, more statistic evidence was needed to establish these differences. Therefore, regression analysis on both sets of IFIs is performed in the following sections.

Table 8.3

Correlation Analysis of Shariah-windows

	ROA	***Tobin's Q***	***VAIC***	***HCE***	***SCE***	***CEE***	***lnBSIZE***	***NED***	***lnSSB***	***lnACS***	***Duality***	***lnFSIZE***	***Risk***	***SUB***	***Listing***	***BIG4***
Tobin's Q	0.0619															
VAIC	0.4993***	0.1257														
HCE	0.5934***	0.2323**	0.9186***													
SCE	0.0519	0.2412***	0.459***	0.3061***												
CEE	0.5259***	0.1968	0.5502***	0.599***	-0.0121											
lnBSIZE	-0.1006	0.0085	-0.1698	-0.1593	-0.0383	-0.1185										
ned5	-0.1517	-0.0341	-0.4312***	-0.4062***	-0.204	-0.1294	-0.2297**									
lnSSB	0.0514	0.1499	-0.1104	-0.0987	0.06	-0.0037	0.3076***	0.0222								
lnACS	-0.017	-0.021	-0.0086	0.0239	0.0495	-0.0054	0.065	-0.1606	0.2739**							
Duality	0.0277	0.2241**	0.0688	0.0813	-0.0041	0.2165	0.14	-0.2948***	0.136	-0.1026						
lnFSIZE	0.263**	0.2416**	0.2572**	0.311***	0.1089	0.5158***	0.0478	-0.0295	0.2717**	0.1081	0.203					
Risk	0.2445**	-0.1002	0.158	0.1708	-0.0546	0.5178***	0.0259	-0.0551	0.3331***	0.2289**	0.2083	0.5901***				
SUB	0.0052	0.0022	-0.1822	-0.2057	-0.0953	0.1029	0.2217**	0.2299**	0.2165	-0.2849***	0.127	0.235**	0.0602			
Listing	0.1922	0.5067***	0.1635	0.2074	0.1006	0.1846	0.0745	-0.0421	0.2796**	-0.2131	0.0777	0.0921	0.0556	0.2839***		
BIG4	-0.1442	-0.0217	-0.3749***	-0.4023***	-0.1698	-0.1388	0.1067	0.2476	0.1288	0.0395	-0.2636**	-0.3558***	-0.0814	0.1601	0.1131	
Region	0.0208	-0.0692	-0.0631	-0.1101	-0.2	0.0571	-0.0279	-0.0665	-0.3686***	-0.4067***	-0.1348	-0.4552***	-0.2225**	0.0535	0.3669***	0.3371***

***Notes*:** *** p<0.01, ** p<0.05

9.5 Multivariate Analysis

Similar to the correlation analysis, regression analysis was performed separately on FFIBs and Windows. Regression models, developed and used in Chapter 6, were repeated in the multivariate analysis with the exception of controlling for type of IFI, being FFIB or Window. The regression models were run to test hypothesis H5.

9.5.1 Accounting and Market Performance of FFIBs

Equation 1 was replicated to examine the impact of VAIC and governance-specific characteristics on the accounting and market-performance of the sampled FFIBs and Windows.

Table 8.4 reports the results of the regression analysis based on the sampled FFIBs accounting and market-performance measured by ROA and Tobin's Q respectively. Firstly, the sampled FFIBs' accounting performance is discussed; the results are reported in panel A of Table 8.4. The *F* -value for pooled data was significant at the 1% level and the adjusted R^2 combined five-year period was 44%. It can be seen that VAIC had a significant positive relationship with ROA at the 1% level, suggesting that the sampled FFIBs were efficient in creating value through their IC and financial capital resource base and, consequently, tended to offer higher returns on assets.

The impact of VAIC's sub-components on the sampled FFIBs' accounting performance of is analysed separately. Model 1a examined the sampled FFIBs' association between accounting-based performance and human capital efficiency. The *F* –value, for the five year pooled data, was positive while the adjusted R^2 was 55%. Model 1a's results indicated a positive and significant relationship at the 1% level between HCE and ROA. Likewise, Model 1b examined the association between the sampled FFIBs' accounting-based performance and SCE. The *F* -value for pooled data was significant at the 1% level while the adjusted R^2 was 18%. Model 1b's results showed no significant relationship between SCE and the accounting-based performance measure. Finally, Model 1c examined the association between the sampled FFIBs accounting-based performance of and capital employed efficiency (CEE). The *F* -value for pooled data was significant at 1% level and the adjusted R^2 is 45%. These results were similar to those of Model 1a but with a slightly higher coefficient. The results suggested a significant positive relationship at the 1% level between CEE and ROA.

Table 8.4

Cross-sectional OLS Regression of ROA and Tobin's Q for FFIBs

Panel A: Accounting Performance

	Model 1	*Model 1a*	*Model 1b*	*Model 1c*
	ROA	**ROA**	**ROA**	**ROA**
Constant	-3.931	0.0740	-8.477***	-0.592
VAIC	0.781***			
HCE		1.091***		
SCE			-0.893	
CEE				9.957***
lnBSIZE	0.00989	-0.467	0.541	-0.611
NED	-1.300**	-1.447**	-0.719	0.198
lnSSB	0.148	0.0877	0.128	0.121
lnACS	-0.0657	-0.216	0.229	-0.591
Duality	0.184	0.198	0.506	1.399***
lnFSIZE	-0.0142	-0.183*	0.497***	0.0455
Risk	0.00281	-0.00355	0.00813	-0.0187**
SUB	0.0612**	0.0527**	0.0480	0.0403*
Listing	0.466	0.580	0.115	0.851**
BIG4	0.950	1.315**	0.201	-0.322
Region	0.409	0.228	-0.236	0.250
N	185	185	185	185
Adjusted R^2	0.435	0.554	0.180	0.449
R-squared	0.4716	0.583	0.2333	0.4849
F-Value	25.69***	47.68***	6.96***	18.21***

Panel B: Market Performance

	Model 2	*Model 2a*	*Model 2b*	*Model 2c*
	Tobin's Q	**Tobin's Q**	**Tobin's Q**	**Tobin's Q**
Constant	-1.086***	-0.966***	-1.430***	-0.785***
VAIC	0.0428***			
HCE		0.0480***		
SCE			0.0745	
CEE				0.683***
lnBSIZE	0.349***	0.334***	0.377***	0.299***
NED	-0.0341	-0.0356	-0.0181	0.0621
lnSSB	-0.0418***	-0.0445***	-0.0396***	-0.0438***
lnACS	-0.0691	-0.0724	-0.0509	-0.109
Duality	-0.0264	-0.0226	-0.0125	0.0528
lnFSIZE	0.0874***	0.0853***	0.113***	0.0847***
Risk	-0.00215**	-0.00235**	-0.00160*	-0.00372***
SUB	0.00236	0.00182	0.00138	0.00114
Listing	-0.0128	-0.0114	-0.0300	0.0182
BIG4	0.136*	0.145*	0.110	0.0576
Region	-0.0714	-0.0849*	-0.0881*	-0.0753
N	185	185	185	185
Adjusted R^2	0.435	0.432	0.378	0.474
R-squared	0.472	0.4688	0.4185	0.5085
F-Value	17.29***	16.62***	11.97***	22.95***

***Notes*:** *** p<0.01, ** p<0.05

In the governance-specific variables, board composition, measured by the fraction of NEDs on the board, was found to be associated significantly with ROA in the negative direction. As for firm-specific control variables, firm complexity was associated positively with ROA at the 1% level, suggesting that a complex business model was affiliated with higher returns on assets. Firm complexity was associated significantly, also, with HCE at the 1% level; however, type of auditor positively and firm size negatively were related to HCE at the 5% level. Firm size was related significantly to SCE at the 1% level, suggesting that, as size increased, the SC efficiency in the total value added increased, also.

Similar to the accounting-based performance measure, the sampled FFIBs' market performance was analysed, also; the results are reported in panel B of Table 8.4. The *F* -value for pooled data was significant at the 1% level and the adjusted R^2 for the combined five-year period was 44%. It can be seen that VAIC had a positive and significant relationship with Tobin's Q at the 1% level, suggesting that the sampled FFIBs' market values was higher than their book values.

As before, the effects of VAIC's sub-components of on the FFIBs' market based performance were analysed separately. Model 2a examined the association between the sampled FFIBs' market-based performance and HCE. The *F* -value for five year pooled data was significant at the 1% level while the adjusted R^2 was 43%. Model 2a's results indicated a positive and significant relationship at the 1% level between HCE and Tobin's Q. Likewise, Model 2b examined the association between SCE and Tobin's Q. The *F* -value for pooled data was significant at 1% level while the adjusted R^2 was 38%. Model 2b's results showed no significant relationship between SCE and Tobin's Q. Finally, Model 2c's results, which examined the association between the sampled FFIBs' market-based performance and CEE, are reported in panel B of Table 8.4. The *F* -value for pooled data was significant at the 1% level and the adjusted R^2 was 47%. These results were similar to those of Model 2a but with a slightly higher coefficient. The results suggested a significant positive relationship at the 1% level between CEE and the sampled FFIBs' market-based performance.

In CG characteristics, board size was associated positively while size of Shariah supervisory board was associated negatively with Tobin's Q, suggesting that the sampled FFIBs with large governing boards and small SSB tended to have higher market valuations. Similar results can be observed for the VAIC sub-components. As for firm-specific control variables, firm-size was associated positively and level of risk

was associated negatively with the sampled FFIBs' market-based performance at the 1% level. This implies that that FFIBs' market values of increase as firm size goes up and reduces as the level of risk goes up.

9.5.2 Accounting and Market Performance of Windows

Like above, Model 1 was repeated to measure the Windows' accounting performance of. The *F* -value for pooled data was significant at the 1% level and the adjusted R^2 was 24%. Focusing first on the results of pooled data as reported in the second column of Table 8.5, it can be seen that VAIC had a positive and significant relationship with ROA at the 1% level. This suggests that Windows are efficient in creating value through their IC and financial capital resource base and, consequently, tend to offer higher returns on assets.

Similar to the analysis of FFIBs, Model 1a examined the association between Windows' accounting-based performance of and HCE. The *F* -value for five year pooled data was positive while the adjusted R^2 was 37%. Model 1a's results indicated a positive and significant relationship at the 1% level between HCE and ROA. Likewise, Model 1b examined the association between Windows' accounting-based performance and SCE. The *F* -value for pooled data was significant at the 5% level while the adjusted R^2 was 9%. Model 1b's results showed no significant relationship between SCE and the accounting-based performance measure. Finally, Model 1c's results, which examined the association between Windows' accounting-based performance and CEE, are reported in Panel A of Table 8.5. The *F* -value for pooled data was significant at 1% level and the adjusted R^2 was 27%. These results were similar to those of Model 1a but with a slightly higher coefficient. The results suggested a positive and significant relationship at the 1% level between CEE and ROA.

The results of the governance-related variables were less encouraging for Windows than FFIBs. None of the governance-related variable was found to explain the Windows' accounting-based performance. As for firm-related control variables, the operating region was found to have positive association with HCE at the 1% level of statistical significance, suggesting that staff, employed by the Windows operating in the Gulf region, were more efficient in creating value.

Table 8.5

Cross-sectional OLS Regression of ROA and Tobin's Q for Windows

	Panel A: Accounting Performance			
	Model 1	*Model 1a*	*Model 1b*	*Model 1c*
	ROA	**ROA**	**ROA**	**ROA**
Constant	-4.593	-4.883	1.333	3.970
VAIC	0.509***			
HCE		0.796***		
SCE			-0.175	
CEE				8.234***
lnBSIZE	-0.401	-0.296	-1.317	-0.533
NED	0.548	1.018	-1.647*	-1.215
lnSSB	0.218	0.374*	0.0390	0.193
lnACS	0.108	0.0868	-0.554	-0.851
Duality	-0.124	-0.0397	-0.576	-0.935*
lnFSIZE	0.172	0.0842	0.259	-0.108
Risk	0.00954	0.00911	0.0148	-0.00165
SUB	0.00872	0.0284	-0.00592	-0.00776
Listing	2.4405	-0.574	0.658	0.499
BIG4	0.0170	0.175	-0.386	-0.489
Region	0.795	1.184**	0.289	-0.427
N	135	135	135	135
Adjusted R^2	0.243	0.373	0.086	0.265
R-squared	0.3108	0.4291	0.1681	0.3312
F-Value	5.38***	7.88***	2.89**	4.75***
	Panel B: Market Performance of Windows			
	Model 2	*Model 2a*	*Model 2b*	*Model 2c*
	Tobin's Q	**Tobin's Q**	**Tobin's Q**	**Tobin's Q**
Constant	-0.187	-0.272	-0.356	-0.112
VAIC	-0.00333			
HCE		0.00636		
SCE			0.110	
CEE				0.324**
lnBSIZE	-0.0133	0.000622	0.00133	0.0229
NED	0.0632	0.0981	0.107	0.0924
lnSSB	-0.0291	-0.0252	-0.0270	-0.0219
lnACS	0.0632	0.0724	0.0787	0.0551
Duality	0.185***	0.192***	0.196***	0.173***
lnFSIZE	0.0748***	0.0728***	0.0735***	0.0598***
Risk	-0.00528***	-0.00536***	-0.00516***	-0.00597***
SUB	-0.0111***	-0.0108***	-0.0108***	-0.0111***
Listing	0.346***	0.333***	0.329***	0.337***
BIG4	0.151***	0.158***	0.154***	0.150***
Region	-0.137**	-0.127**	-0.113*	-0.163**
N	135	135	135	135
Adjusted R2	0.503	0.504	0.512	0.523
R-squared	0.548	0.5487	0.5554	0.5653
F-Value	12.61***	13.34***	15.81***	14.46***

***Notes*:** *** p<0.01, ** p<0.05

The results of the Windows' market-based performance are reported in Panel B of Table 8.5. The *F* -value for pooled data was significant at the 1% level and the adjusted R^2 for

the combined five-year period was 50%. It can be seen that VAIC had no significant relationship with Tobin's Q.

Similar to the accounting-based performance measure, Model 2a examined the association between Windows' market-based performance of and HCE. The *F* -value for the five year pooled data was significant at the 1% level while the adjusted R^2 was 50%. Model 2a's results indicated no significant relationship between HCE and Tobin's Q. Model 2b examined the association between SCE and Tobin's Q. The *F* -value for pooled data was significant at the 1% level while the adjusted R^2 was 51%. Model 2b's results showed no significant relationship between SCE and Tobin's Q. Finally, in Model 2c's results are reported. The *F* -value for pooled data was significant at the 1% level and the adjusted R^2 was 52%. The results suggested a positive and significant relationship at the 5% level between CEE and Windows' market-based performance.

In CG characteristics, role duality was the only standalone variable which had a significant relationship with the sampled Windows market-based performance of at the 1% level. The relationship was consistent with the VAIC's sub-components.

As for firm-specific control variables, the results were more encouraging than those observed for the FFIBs. All of the firm-specific control variables related significantly to the sampled Windows' market-based performance at the 1% level, except for operating region which was significant at the 5% level. The results suggested that, although strong CEE was the main determinant of Windows' market value, nonetheless firm-specific variables played, also, a pivotal role in explaining the sampled Windows' market-based performance.

9.6 Discussion of Findings

The findings depicted a positive relationship between IC (measured by VAIC) and financial performance of both sets of IFIs being FFIBs) and Windows. The result implied that both the sampled FFIBs and Windows remained efficient in creating value through their IC and financial capital resource base and, consequently, offered higher returns on assets during the period under study.

On the other hand, none of the governance related variables related to accounting performance. Despite the strong relationship between IC and FFIBs' and

Windows' accounting-based performance, the differences in the corporate governance features indicated some differences between both sets of sampled IFIs.

On the other hand, the FFIBs' and Windows' market-based performance (measured by Tobin's Q) of suggested significant differences between both sets of sampled IFIs whereby, in the case of the sampled FFIBs, VAIC related significantly only with Tobin's Q. In this case, strong financial and physical CEE and HCE played a significant role in determining the sampled FFIBs' market-based performance of. The analysis suggested, also, that strong market valuation was driven by larger board size and smaller SSB size. On the other hand, the sampled Windows' market value was driven mainly by strong financial and physical CEE alone. Unlike the accounting-based performance, none of the governance related variables seemed to explain the Windows' market-based performance of. However, strong firm characteristics seemed to play a significant role in determining the sampled Windows' market-based performance.

The overall results supported the main research hypothesis (H5) that there were significance differences in the FFIBs' and Windows' IC and CG performance. The results fulfilled, also, this study's third objective of comparing the effects of IC and CG-features on FFIBs' and Windows' performance.

9.6.1 Accounting-based Performance of FFIBs and Windows

Although IC (measured by VAIC) was expected to be one of the major determinants for the sampled FFIBs' and Windows' accounting-based performance, IC was expected to affect the accounting-based performance of both sets of the sampled IFIs differently. The significant positive result suggested a positive relationship between VAIC and the FFIBs' and Windows' accounting performance of. Therefore, these results did not support the assumption that there were significant differences in the sampled FFIBs' and Windows' IC performance.

The results, observed in this study, endorse the findings of the previous studies conducted in the context of the Islamic finance industry. For instance, the results agree with the findings of Samad and Hassan (1999) who reported that there were no significant differences in the financial performance, based on ROA and ROE, of Islamic and conventional banks operating in Malaysia. The results agree, also, with Hussein's (2004) and Bader et al.'s (2008) findings; they reported no significant differences in the profit efficiencies of conventional and Islamic banks. Likewise, the results lend support

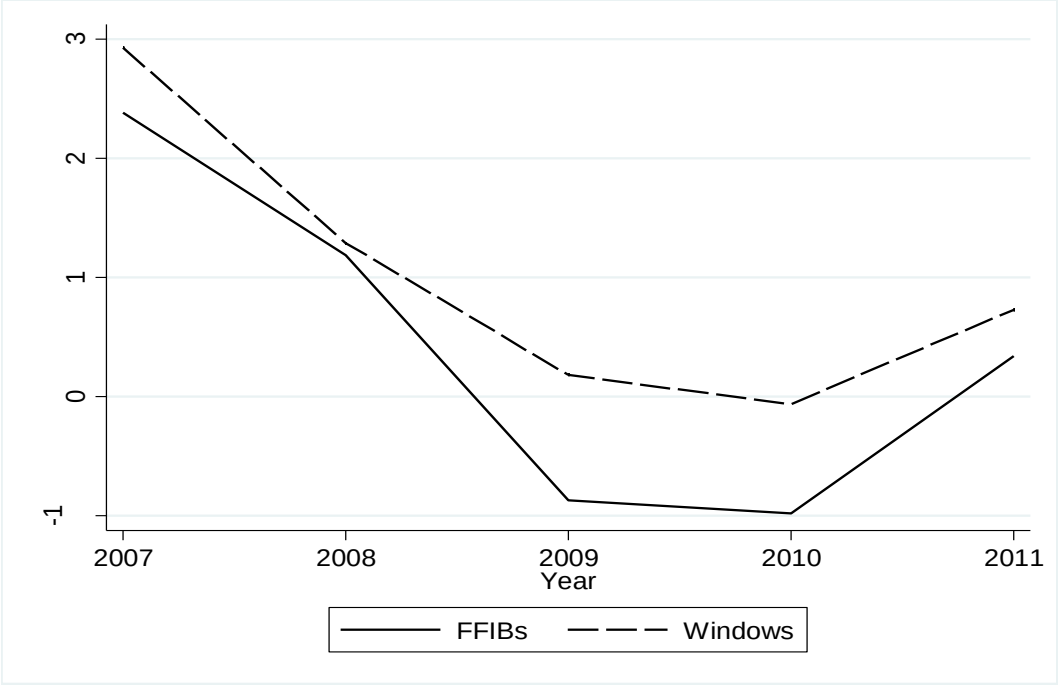
to the argument of Beck et al. (2013) who suggested that there were no significant differences between the business models of conventional and Islamic banks.

Furthermore, the results of the analysis of VAIC's sub-components were similar to those observed for Model 1 in Chapter 6. In summary, the sampled FFIBs and Windows accounting based performance was driven mainly by CEE in addition to HCE, while SCE was found not to be associated significantly with both sets of the sampled IFIs' accounting-based performance. The statistical analysis implied that human capital was the main value driver for both sets of the sampled IFIs. This meant that this study's sampled IFIs possessed substantial human IC i.e. higher education, and knowledge (including Shariah-knowledge) to make better entrepreneurial judgment using these skills (Colombo and Grilli, 2005) when deploying financial capital.

Figure 8.1 illustrates the sampled FFIBs' and Windows' accounting-based performance of for the five year period of study. Identical trends in both sets of IFIs' the accounting-based performance can be observed in the graph. Windows remained, on average, financially more profitable and offered higher returns on assets than FFIBs during the period under study. The average financial performance for both sets of IFIs declined from 2008to2010. The decline could be explained as the impact of financial crisis; however, an upward trend in the graph from 2010 onwards indicated market adjustments.

Figure 8.1

Average accounting performance of FFIBs and Windows



The analysis offered no significant differences between both sets of IFIs in utilizing their IC and financial resources and, hence, suggested that IC had a similar impact on the accounting performance of IFIs being either FFIBs or Windows..

In summary, the results of the corporate governance mechanism suggested that there were significant differences in both sets of IFIs. The results of the accounting based performance measure lent some support to the argument that FFIBs are managed differently than their counterparts –the Windows. However, more evidence was needed to support this claim; this was the analysis of the sampled IFIs' market-based performance.

9.6.2 Market-based Performance of FFIBs and Windows

Two performance measures, namely: accounting-based performance (measured by ROA); and market-based performance (measured by Tobin's Q) were employed to determine the effects of IC and CG on performance of the sampled IFIs being either FFIBs or Windows. In the case of latter, IC (measured by VAIC) was expected to be one of the major determinants of the sampled FFIBs' and Windows' market-based performance. However, IC was expected to affect the market-based performance of both sets of IFIs differently. VAIC was found to be associated positively with the FFIBs' market-based performance of, whereas there was found an insignificant (negative) relationship between VAIC and Windows' market-based performance. This implied that IC impacted differently on the FFIBs' and Windows' market-based performance and, hence, supported the assumption.

9.6.2.1 Market-based Performance of FFIBs

The analysis showed a positive and significant relationship between FFIBs' market performance and the variables, CEE and HCE, suggesting that the market captured VAIC from strong financial and physical capital (CEE) and HCE. These results were consistent with the earlier findings in the context of conventional banking. The analysis suggested that an increase in the capital base impacted positively on the FFIBs' market valuation and profitability of. Hassan and Bashir (2003) reported similar results from their analysis of the performance of Islamic banks operating in 21 countries worldwide for the period 1994-2001. The results agreed, also, with the findings of Abdul-Majid et al. (2010) and Ayesha K Khan (2010) who submitted that Islamic banks enjoyed

substantially higher deposit growth rates than conventional banks which, ultimately, increased the capital base (CE) for Islamic banks. Islamic banks possess competent human resource base which has expertise in Shariah-knowledge and knowledge of contemporary finance. Hence, the human capital employees these funds in Shariah-compliant projects to create value for its stakeholders. Thus, value is created through efficient HC and strong physical and financial capital (CEE. Ultimately, higher ratios of total value added impacts positively on the market-based performance which, as a consequence boosts investors' confidence in the FFIBs.

Among CG related variables, board-size (positively) and size of SSB (negatively) were related significantly to Tobin's Q at the 1% level. Similar trends could be observed for the VAIC sub-components *viz*. HCE, SCE, and CEE. This implied that FFIBs with large board size tended to have higher market valuations. This finding was consistent with those of Adams and Mehran (2003) and Adams and Mehran (2005) who found larger boards to be related positively to the market value of commercial banks based on Tobin's Q. Consistent with Adams and Mehran (2005) and Andres and Vallelado (2008), this study's result challenged the widespread belief in the agency theory tenants (Provan 1980, Goodstein et al. 1994) that small boards were more efficient and that shareholder interests could be compromised if the board was too large (Hoechle et al., 2012). Contrarily, the results suggested that larger boards might prove more efficient in advising and monitoring the sampled FFIBs 'functions and might create more value and, thus, higher market valuation. The analysis suggested, also, that there was a significant negative relationship between SSB size and the sampled FFIBs' market-based performance. The strong statistical significance in the negative direction suggested that a large SSB was subject to higher cost and, ultimately, markets placed a lower value on a FFIB with larger SSB size.

As for firm-specific control variables, firm-size and type of auditor related positively with the FFIBs' market-based performance at 1% and 10% level of significance respectively. On the other hand, the level of risk related negatively with the sampled FFIBs' market-based performance at the 1% level.

The positive significant relationship between firm-size and Tobin's Q suggested that Islamic banks became more profitable and were perceived to be financially strong in the market as they grew in size. This result was in line with the previous studies in the context of conventional and Islamic finance (Bashir, 1999; Majid et al., 2010; Čihák and Hesse, 2010). The explanation for the significant size effect on market-based

performance was that large FFIBs possessed relatively higher shares of physical and financial capital base and their operations were often more complex as was their need for IC stocks. Such increased access to resources influenced the development and level of IC. Therefore, larger FFIBs tended to have better stocks of IC particularly, human IC since staff accumulated specialized information, skill and know-how. This allowed them to communicate efficiently and effectively and, thus, reduced decision-making errors and improved performance (Luthans and Youssef, 2004). Likewise, the type of auditor (BIG4) was yet another firm-specific variable which had a positive impact on the sampled FFIBs' market-based performance of. Having a BIG4 auditor added value to the credibility of the sampled FFIBs and suggested that the sampled FFIBs were not suffering from internal control problems because they were audited by both in-house auditors (Shariah-audit) to ensure the IFIs' financial statements were in accordance with the Shariah guidelines and by the external auditors (i.e. BIG4) to ensure the credibility of the financial statements. As expected, the level of risk related negatively with both set of IFIs' market-based performance of. Highly leveraged IFIs are perceived risky by the market.

The overall analysis suggested that IC impacted positively on the sampled FFIBs' market-based performance of. The market value was captured mainly by strong CEE and HCE. Additionally, the analysis suggested that markets placed substantially higher values on those FFIBs which were large in size (i.e. total assets); had lower leverage and a lesser statistical significance; and were audited by large audit firms (BIG4). Equally, the results indicated that markets tended to place higher values on those FFIBs which had a board-size higher than the average e.g., seven members (Jensen, 1993) and had a small size of SSB.

9.6.2.2 Market-based Performance of Windows

On the other hand, the analysis revealed no significant relationship between Windows' market-based performance and IC (measured by VAIC). Furthermore, the negative direction of the relationship suggested that, unlike the FFIBs, IC was not the main value driver for the sampled Windows. The result supported strongly the assumption that, in determining the market-based performance, there were significant differences in the FFIBs' and Windows' IC performance. The results of the VAIC sub-components suggested that CEE was the standalone VAIC sub-component which was related significantly to the Windows' market-based performance.

As argued earlier, the fundamental groundings of conventional and Islamic finance were entirely different from one another. Leading conventional banking groups came into Shariah-compliant business fearful of losing their existing high-net-worth individual and corporate clients in certain regions i.e. the Arabian Peninsula. Furthermore, conventional banking was striving to restore investors' confidence due to the vital role which they played in bringing about the recent financial crisis. On the other hand, the level of trust in Islamic banking was at an all-time high, given the IFIs' stability and profitability during the recent financial turbulence. Additionally, although the IFIs' total assets i.e. $2 trillion, reported in Ernst and Young (2013) were only a fraction of those held by conventional financial institutions, the conventional giants lusted for those assets and tried to attract these sums via Shariah-windows in order to fulfil their immediate liquidity needs. The argument was supported by this study's results whereby the Windows' market-based performance was explained merely by strong CEE.

On the other hand, none of the governance-specific variables were associated with the Windows 'market-based performance of, except for leadership structure (role duality); this was significant at the 1% level. As for firm-related characteristics, firm size, level of risk, firm complexity, listing status, BIG4, and operating region, all were found to have significant relationships with Windows' market performance of based on Tobin's Q at the 1% level. The exception was operating region which was significant at the 5% level. In this case, firm size, listing status and type of auditor were in the positive direction while level of risk, firm complexity and operating region were in the negative direction. In summary, the sampled Windows' market-based performance was driven mainly by CEE and strong firm-related characteristics.

Figure 8.2

Average market performance of FFIBs and Windows

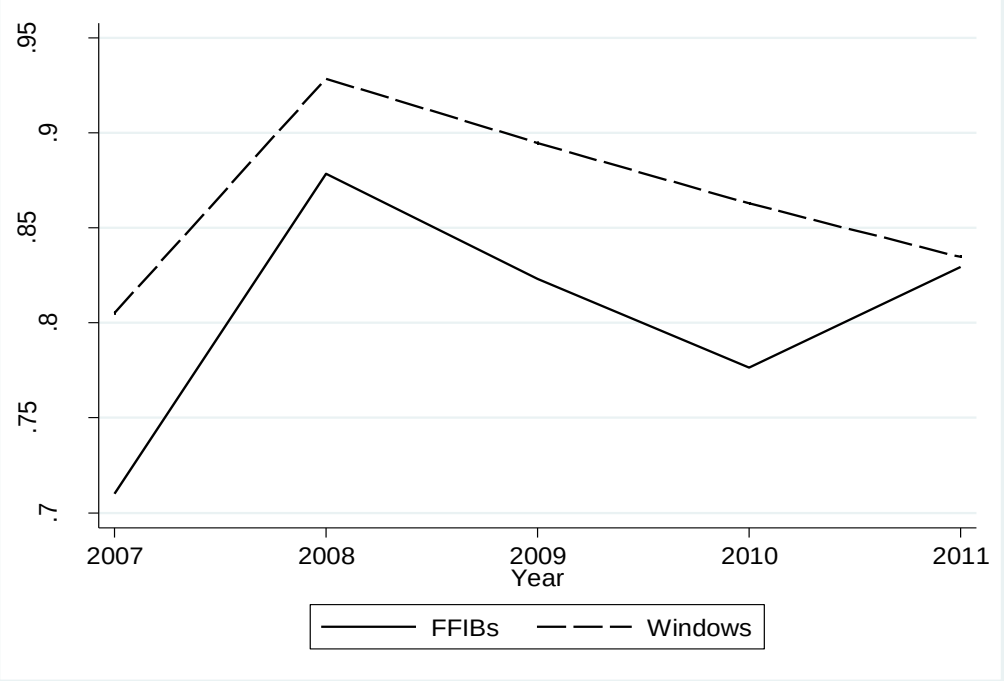


Figure 8.2 illustrates the FFIBs' and Windows' market-based performance of for the years 2007-2011. The analysis suggested that the market value for both sets of IFIs was highest at the start of study period. However, a downward trend can be observed from 2008 as the financial crisis hampered the financial markets worldwide. Unlike the trends observed for accounting-based performance measure, ROA; the sampled Windows' market-based performance was still in decline, suggesting that Windows continued to struggle to gain market confidence. On the other hand, the sampled FFIBs' market confidence seemed to be restored as indicated by the results for the year 2010 onwards.

Strong support for the argument that the sampled FFIBs and Windows were governed differently can be observed in the market-based analysis. The proponents of good corporate governance codes argued for board size to be small; their reasoning was that large boards were less effective Jensen (1993). The negative relationship between board-size and the sampled Windows' market-based performance of lent some support to the above argument. However, the strong positive (significant at 1% level) relationship between board size and the sampled FFIBs market-based performance of contradicted these claims. Similar results can be observed for board-composition (NED) and ACS, both variables related positively with the sampled Windows' market-based performance of while the relationship was negative for the sampled FFIBs. Surprisingly, role duality was found to be related significantly with the sampled Windows' market-

based performance of. A possible explanation of the said relationship was that higher authoritative roles (i.e. CEO and Chairman) were subject to higher compensation and, hence, the market did not appreciate such expenditures.

The statistical analysis on the sampled combined IFIs' market-based performance, using data from both FFIBs and Windows, showed a significant negative relationship between firm complexity and Tobin's Q (see chapter 6). However, the results of the separate analysis suggested that firm opacity related significantly only in the negative direction with the sampled Windows' market-based performance of,. Furthermore, there was found to be a positive relationship between firm-complexity and the sampled FFIBs' market-based performance.

The contradiction in the results suggested that the Windows management was struggling to tackle the complexity at present and this could aggravate the governance problem which might lead Windows to encounter agency problems. Another explanation for the contradictory results was that the sampled Windows were the extended hands of conventional banking groups; these groups were involved in various businesses and, hence, had complex business structures. Research suggested that firms with greater numbers of subsidiaries were more complex and needed higher internal controls and greater in-house capabilities (Zaman et al., 2011); in the case of Windows, such supporting mechanism was provided by IC, especially, human IC. As observed in the results of market-based performance, the sampled Windows were lacking intellectual resources, particularly, the human capital. Therefore, these Windows needed to overcome the shortage of human capital well-versed in Shariah-knowledge in order to gain market confidence.

Likewise, the statistical analysis on the market-based performance of the combined IFIs (FFIBs and Windows) conducted in chapter 6, suggested a significant positive relationship between listing status and Tobin's Q. However, the analysis performed separately on both sets of IFIs suggested that only listing status was associated strongly (at 1% level) with the sampled Windows' market-based performance. Whereas listing status was found to be associated negatively with the sampled FFIBs market-based performance of; however, the relationship was insignificant. Nonetheless, the analysis implied that Windows was new in Shariah-compliant business adopting such techniques (i.e. getting listed) in order to gain investors' confidence. It is not to say that listed firms are considered more credible and are more visible to a wider range of investors in the global financial markets.

Nevertheless, given this study's results whereby the sampled Windows seemed to have lower levels of confidence among market players, listing might help them to improve their level of trust.

Type of auditor (BIG4) was found to influence the sampled Windows' market-based performance. BIG4 was associated significantly with the sampled Windows' and FFIBs' market-based performance of at the 1% and 10% levels. Differences in the statistical significance indicated that the market trusted the internal audit (SSB-audit) system adopted by the sampled FFIBs, while the sampled Windows did not enjoy the same level of confidence and, in order to mitigate these concerns, Windows tended to hire BIG4 auditors.

Finally, operating region was found to influence the sampled Windows' market-based performance; however, the negative direction of the relationship suggested systematic differences in investments in IC stocks and performance outcomes across geographical locations. The analysis suggested that Windows, operating in regions other than the Gulf, tended to have higher market valuations. This finding is consistent with the earlier research of Yudistira (2004) in the field of Islamic finance.

The overall results suggested that the sampled Windows, being the extended hands of conventional financial institutions, tended to follow good corporate governance codes, while this western concept of corporate governance was a misfit for the sampled FFIBs. Islamic banking is based on trust and pursues the betterment of the society as whole (this is as per the theoretical assertions and may not be found in Islamic banking practice) whereas profit maximization is the ultimate goal for the extended hands of conventional banks –the Windows. Hence, the classical corporate governance model is unsuitable for those financial institutions (i.e. FFIBs), which are based purely on the fundamental divine guidelines provided by Shariah.

9.7 Chapter Summary

A significant contribution of this research was to verify the homogeneity of the Islamic finance industry. The study argued that the Islamic finance industry was not homogeneous since not all the financial institutions, offering Shariah-compliant products, were FFIBs. Therefore, these institutions followed different pursuits and deployed their stocks of human and financial capital differently. Furthermore, these institutions were governed differently and, thus, achieved different levels of accounting

and market-based performance. In order to find empirical evidence on the said argument, the study examined the impact of IC and (CG features on the accounting and market-based performance of 64 IFIs operating in ten different countries worldwide for the period 2007–2011 by dividing them into FFIBs and Windows.

The results indicated no significant differences in the IFIs' accounting-based performance being either FFIBs or Windows. Furthermore, the analysis suggested a significant positive relationship between the FFIBs' and Windows' financial performance of and the variables, CEE and HCE, suggesting that ROA captured the VAIC from both CEE and HCE. On the other hand, the results, based on Tobin's Q, indicated a positive and significant relationship between the sampled FFIBs market-based performance of and the variables, CEE and HCE, suggesting that the market captured the VAIC from two main sub-components *viz.* CEE and HCE. In the case of the sampled Windows, the market captured the VAIC from CEE alone.

Furthermore, the analysis suggested that the so-called classical model of corporate governance was not a good fit for the ideology upon which Islamic banking was based. The analysis of (CG related variables suggested diversified relationships between CG-features and performance of both sets of IFIs in which the results of the market performance, based on Tobin's Q, are more encouraging. Arguably, Islamic banking is based on trust and Islamic values are more of ethos and, hence, such institutions (i.e. FFIBs) require relatively less monitoring. On the other hand, Windows, backed solely by the conventional banking groups are suffering from trust issues in the market and in order to mitigate these concerns such institutions tend to adopt the westernised corporate governance model. In doing so, they keep a higher fraction of NEDs on governing boards; separate the role of CEO and chairman; and have large ACS. Additionally, such institutions tend to hire BIG4 as their external auditors and become listed in order to be more credible and visible in the market. Despite putting all these safeguards in place, the Windows' market value of is far from challenging the FFIBs' market value.

With this chapter, all three research objectives have been achieved. Therefore, the next and final chapter of the thesis summarises the research.

Chapter 10: Summary and Conclusions

9.0 Introduction

This research study aimed to examine the effects of intellectual capital (IC) and corporate governance (CG) features on performance (i.e. accounting performance based on ROA and market performance based on Tobin's Q) of Islamic financial institutions (IFIs) for the period 2007-2011 while controlling for firm-specific variables. This study's findings are of interest beyond the IC performance literature since Islamic banking and finance regulators may use the insights provided by this study as a basis for further discussion in determining the role of IC and CG-features in the Shariah-complaint banking model. The main research question scrutinised to what extent did IC efficiency (human capital, structural capital and capital employed) and CG features affect accounting (ROA) and market-based (Tobin's Q) performance of IFIs for the period 2007-2011?

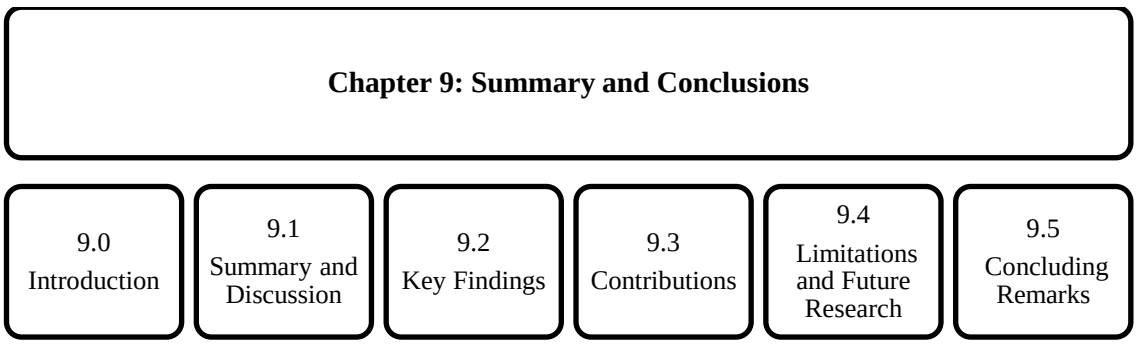
Based on resource-based view (RVB) of the firm, this research reports that IC is the main strategic source of competitive advantage for IFIs. In contrast, following the concepts of agency theory, this study suggests that the classical CG model does seem to explain the IFIs' performance. Hence, the study calls for a departure from the westernized concept of CG for the Islamic banking model. Both IC and Islamic finance are young concepts and striving with many challenges. In the field of IC, there is no one agreed method for measuring IC. Likewise, there is no study to date that measures the effects of IC on IFIs' performance. Against this background, it was fairly challenging to marry these two concepts along with CG and to analyse their effects on performance while using the theoretical lens of RBV and agency theory. However, an in-depth review of the literature suggested that VAIC was the most appropriate method for measuring IC while using secondary data. Accordingly, bearing in mind the research objective, VAIC methodology was selected to measure the effects of IC on IFIs' performance.

There were three main research hypotheses tested in relation to the effects of IC, CG and firm-specific characteristics on IFIs' performance of in achieving the first research objective. The fourth research hypothesis related to the effects of IC, CG and firm-specific characteristics on IFIs' performance of before and after the financial crisis,

thus addressing the second research objective. The fifth research hypothesis related to the effects of IC, CG and firm-specific characteristics on performance of FFIBs and Windows; this was the third research objective.

The study was structured into three empirical research projects. The first research project examined to what extent IC and CG features affected performance (accounting and market) of 64 IFIs operating in ten different geographical locations for the period 2007-2011, while controlling for firm-specific characteristics. The findings of the first research project suggested some variations in the results observed for the five year period under study. Also it indicated that the Islamic finance industry was not homogenous. Therefore, it provided bases for projects two and three. In this regard, the research's second objective was to analyse the effects of IC and CG features on the IFIs' performance o before and after the financial crisis. Finally, the research aimed to explore the effects of IC, CG and firm-specific characteristics on the performance of FFIBs and Windows and. Each project comprised of two distinct performance measures namely ROA and Tobin's Q. The results showed that RBV better explained better IC's impact on performance. However, the effects of CG-features, examined via lens of agency theory, did not offer any insight into the Shariah-compliant business model. Lastly, the effects of firm-related variables on the IFIs' performance were examined using agency theory lens; this offered interesting insights.

This concluding chapter presents a summary of the research study, an overview of the key findings, the contribution of this study, limitations and suggestions for future research.



The chapter is structure as follows. Section 9.1 summarises the research objectives of this study and section 9.2 consolidates the overall research findings with explanations for each project and an outline of the dataset. The key contributions are discussed for each of the three empirical research projects in section 9.3. Then, the limitations and

suggestions for future research, which emerged in the course of this study, are outlined in section 9.4. Finally section 9.5 submits the concluding remarks.

10.1 Summary and Discussion

The overall research objective was to examine to what extent IC and CG features affected the performance of 64 IFIs operating in ten different geographical locations for the period 2007-2011, while controlling for firm-specific characteristics, as presented in Chapters 1 and 4. In order to achieve the overall objective, this study inferred potential motivations for IC performance from resource-based view of the firm and CG plus firm-specific variables from agency theory. Both RBV and agency theory were introduced in the main research objective of this study. The main research objective was to test whether IC and CG-features effected IFIs' performance (i.e. accounting performance based on ROA and market performance based on Tobin's Q) of while controlling for firm-specific variables. In order to examine such relationships, methodological issues arose of how to measure IC value. VAIC methodology was employed to measure IC value. This study bridges the gaps in previous IC literature in the area of Islamic banking and finance, as identified in Chapters 2 and 3. The subordinate research objectives were introduced to measure the effects of IC-efficiency and CG-features in the pre- and post-financial crisis period and the effects of IC-efficiency and CG-features on FFIBs' and Windows' performance. The three research objectives were raised to address gaps in the literature; these were identified in the reviews of IC literature in Chapter 2 and Islamic banking literature in Chapter 3 respectively.

10.2 Summary of Key Findings

In order to achieve the overall research aim of examining the effects of IC and CG-features on IFIs' performance, three research questions were introduced in Chapter 1 at the beginning of this study. This study addressed the three research questions in three individual research projects. The sequence of the three research projects was to achieve the overall research aim as outlined in Chapter 4. In order to answer the research questions, different theories were reviewed critically since there was no single theory related to IC. However, the literature considered resource-based view of the firm and agency theory to be applicable when discussing IC. These theories were suggested in the IC performance literature to explain the effects of IC on performance, as discussed

in Chapter 4. Based on the resource-based view (RBV) of the firm, this study hypothesised a positive relationship between IC (measured by VAIC and its sub-components) and firm performance. Likewise, based on agency theory, this study hypothesised a positive relationship between CG-features, firm-related variables and firm performance.

10.2.1 Project one: Effects of IC and CG-features on performance of IFIs

The effects of IC and CG-features on IFIs' overall performance were estimated in project one while controlling for firm-specific variables. The project comprised of two distinct performance measures in regression analysis: ROA and Tobin's Q. Specifically, the project answered the following research question;

> ***Research Question 1:*** To what extent do IC efficiency (human capital, structural capital and capital employed) and corporate governance features affect accounting (ROA) and market-based (Tobin's Q) performance of IFIs for the period 2007-2011?

Previous literature focused on measuring the impact of IC alone and ignored CG-features. In a departure from the existing literature, this research included, also, the potential effects of CG-features on the IFIs' performance. Therefore, this research applied innovatively the CG-features to the area of IC research. The results indicated a significant positive relationship between VAIC and the IFIs' performance. The results of the accounting-based performance indicated a positive and significant relationship between financial performance and the variables, CEE and HCE, suggesting that ROA captured the VAIC from both CEE and HCE. However, none of the governance related variables were found to explain the IFIs' accounting performance. On the other hand, the IFIs' market-based performance was found to be driven by strong CEE, HCE and, to a lesser statistical significance, SCE. This suggested that the market captured the VAIC from CEE, HCE and SCE. Additionally, CG features and firm-related variables played, also, a significant role in determining the sampled IFIs' market performance of. The results indicated that markets tended to place higher values on those IFIs which did not follow the CG codes as such as having role duality, having small size of SSB, having larger governing boards and, to a lesser degree of statistical significance, having higher fraction of NED's on the boards. Equally, markets placed substantially higher values on those IFIs which were large in size (i.e. total assets), had lower leverage, were listed,

adopted less complex business structures, were audited by large audit firms (BIG4), and were located in regions other than the Gulf.

The relationship between IC-efficiency, CG-features and firm performance in the context of Islamic banking and finance was untested previously. The findings of this analysis contribute to the literature of IC management, as relevant determinants can be considered for developing IC value in the IC management process concerning IFIs.

10.2.2 Project two: Effects of IC and CG-features on performance of IFIs in pre- and post-financial crisis

The effects of IC and CG-features on IFIs' overall performance of in the pre- and post-financial crisis period were analysed in project two. Specifically, the project answered the following research question;

> ***Research Question 2***: To what extent do IC efficiency (human capital, structural capital and capital employed) and corporate governance features affect accounting (ROA) and market-based (Tobin's Q) performance of IFIs before and after the financial crisis?

The main results were as follows. Firstly, IC helped to sustain IFIs' profitability of, as measured by ROA at all times. The effects of pre-crisis IC (measured by VAIC) on IFIs' accounting-based performance of appeared to be manifested through strong CEE, HCE, and firm-opacity. However, the listing status appeared to be a significant factor in determining the IFIs' financial stability in the post-crisis effect of IC. Likewise, the market captured the VAIC from all three sub-components *viz*. CEE, HCE, and SCE in addition to firm-size, listing status and lower leverage in the pre-crisis period. The same variables were used to determine the IFIs' market value in the post-crisis period with relatively higher statistical significance, except for SCE. Secondly, CG features lent little help to the sampled IFIs sustaining profitability and market valuation. This suggested that the classical model of CG did not seem to fit with the ideology upon which Islamic banking was grounded. Arguably, these findings are generally robust since the empirical evidence was collected for 64 IFIs operating in ten different geographical locations worldwide. Thus, this research study calls for a radical departure from the existing orthodox corporate governance model, particularly for IFIs, which are based on trust.

10.2.3 Project three: Effects of IC and CG-features on performance of Full-fledged Islamic Banks (FFIBs) and Shariah-Windows (Windows)

The effects of IC and CG-features on FFIBs' and Windows' overall performance were analysed in project three. Specifically, the project answered the following research question;

> ***Research Question 3***: To what extent do IC efficiency (human capital, structural capital and capital employed) and corporate governance features affect accounting (ROA) and market-based (Tobin's Q) performance of full-fledged Islamic banks and Shariah-windows for the period 2007-2011?

The study argued that the Islamic finance industry was not homogeneous since not all the financial institutions, offering Shariah-compliant products, were FFIBs. Therefore, these institutions followed different pursuits and deployed their stocks of human and financial capital differently. Furthermore, these institutions were governed differently and, thus, achieving different levels of accounting and market-based performance.

The results indicated no significant difference in the IFIs' accounting-based performance of being either FFIBs or Windows. Furthermore, the analysis suggested a positive and significant relationship between the FFIBs' and Windows' financial performance of and the variables, CEE and HCE. This suggested that ROA captured the VAIC from both CEE and HCE. On the other hand, the results, based on Tobin's Q, indicated a positive and significant relationship between FFIBs' market-based performance and the variables, CEE and HCE, suggesting that the market captured the VAIC from two of its main sub-components *viz.* CEE and HCE. In the case of Windows, the market captured the VAIC from CEE alone.

10.3 Contributions and Implications for Policy and Practice

The main contribution of this research study was to examine the impact of IC and CG features on the accounting and market-based performance of 64 IFIs operating in ten different countries worldwide for the period 2007–2011, while controlling for firm-specific features. Hence, the study makes a contribution to the existing literature on IC, precisely to IC performance literature, by providing the evidence about IC's role of in determining the performance of the ethical banking model. Equally, the study contributes to the literature on Islamic banking and finance and the IFIs' performance of

by measuring the effects of intangible resources on performance. Likewise, the study contributes to the literature on IC and CG by combining both concepts in one study. Another contribution of this study is that it considered IC and CG performance in the pre- and post-financial crisis period; this provided a novel insight into the role knowledge resources i.e. IC in times of financial meltdown. Finally, it is to point out that the Islamic finance industry is not homogeneous as such since not all IFIs are FFIBs institutions. Instead, there exists a distinction within the industry. Sampled IFIs were sub-classified into FFIBs and Shariah-Windows (Windows) in order to verify the performance differences between the two sets of IFIs. The analysis showed that FFIBs had relatively strong financial and human capital bases and, as a consequence, outperformed Windows, during the period under study. Furthermore, analysis suggested that Windows were suffering from agency problem and to mitigate this concern such institutions tended to erect safeguards such as becoming listed, having BIG4 auditors, and keeping higher fractions of NEDs on their boards. However, the effect of such safeguard measures was not reflected positively in their performance indicators. Also, the study revealed that both IC and CG-features had different effects on performance measures i.e. ROA and Tobin's Q. Besides the contribution to the literature, this research is of interest to policy makers and, on a practical level, rating agencies may use this information when evaluating an IFI's real value. Likewise, IFIs can use this information to identify and have a better understanding of their competitive advantage in the market. Finally, investors may consider this information while making their investment decisions.

10.4 Limitations and Suggested Areas for Future Research

10.4.1 Limitations

As stated earlier (see Chapter 1), the main objective of the study was to analyse the impact of IC and CG-features on IFIs' performance. As suggested by the extent literature (see Chapter 2), there was no one agreed upon method of measuring intellectual capital. Therefore, this study's first and foremost limitation lay in the methodological tool (VAIC) employed in the study for measuring IC. The VAIC model of efficiency measurement was challenged, also, by many studies. Andriessen (2004) opined that, although the VAIC methodology depicted clearly how much each sub-components of VAIC (i.e. human capital, structural capital, and capital employed)

contributed to value-added, the dilemma was that the model might fall short in identifying the synergistic effects for value creation from interactions of different forms of capital. Consistently, Bontis et al. (2000) were concerned that "there may be interactions among the components of IC and so it may not be possible to calculate exactly the contribution to value creation from each resource. For instance, advances in IT or computer automation (which is an element of structural capital) could sometimes enhance labour productivity (which might then be interpreted as an increase in human capital efficiency). Therefore, one may not be able to isolate the weighting of each factor in facilitating an increase in HCE, SCE, or CEE". In a similar vein, Chang (2007) modified the VAIC methodology and added R&D expenditure and Intellectual Property (IP) components to VAIC for measuring IC. Their reasoning was that the sub-component of VAIC –SCE was incomplete since it did not include R&D expenses and intellectual property. R&D expenditures and intellectual property assets (Brooking, 1996) play important roles in business and, therefore, those R&D expenses and intellectual property assets should be viewed as asset-like investments (Chang, 2007). Likewise, Ståhle et al. (2011) contended that the VAIC approach involved an unsettled conception of IC capitalization via its components of human and structural capital.

In defending the use of VAIC, it is argued that the VAIC method uses quantitative data and, therefore, the use of VAIC is justified because this study used secondary data and, hence, quantitative in nature. Arguably, this was reliable and validated since it was drawn from the audited data disclosed in annual reports/financial statements of the selected financial institutions. Despite the inherent limitations of VAIC, it is an ideal measure for the context of the present research since this study makes an original contribution to the existing IC literature by analysing the effects of IC on the performance of 64 IFIs operating in ten different countries.

The second limitation was the composition of the sample IFIs; these were based in ten different countries located in three geographical regions namely Asia, Europe, and the Middle East. One of the potential problems with an international composition of sample IFIs is the distribution of the sample which is concentrated towards some countries i.e. Bahrain and Malaysia. For instance, a total of 28 IFIs were selected from these two countries (14 from each county); this constituted about twenty-three per cent of the whole sample. Therefore, given the differences in the macroeconomic features of these countries and the rest of the sample, the observed results might be biased towards some country's effects.

Inclusion of individual socio-economic country-specific variables i.e. GDP growth, reporting standards, into the empirical estimations, was one of the common techniques, suggested by the extent literature, to mitigate such bias. Given the divergent nature of the sample used in this study, it was impossible to use such a technique. Firstly, it would have resulted in many country-specific variables with a very small number of IFIs in each group. Secondly, disclosure practices across the sample were different and, therefore, it was impossible to collect the required variables from all countries included in the sample.

10.4.2 Suggested Areas for Future Research

The suggested areas for future research emerged in two ways over the course of this study: from previous literature and from the results of this research study. Several unanswered questions were identified in the review of IC literature in Chapter 2 and the Islamic banking and finance literature in Chapter 3. Three of these unanswered questions were approached in this study. The remaining unanswered questions constitute potential interesting research questions for future research in the area of IC as well as Islamic finance. The findings of this research study indicate possible ways forward for the research area of IC and Islamic finance.

Similar to other exploratory research, some themes for further research are highlighted. This study used mainly numerical secondary data present study and, therefore, it is thought that this study's findings would have attained a higher confidence level if the value of IC in Islamic finance industry was calculated by employing any of the methods available, such as the balanced scorecard (BSc). The proposed research objective can be achieved through case-study approach focusing on a few IFIs. Besides, the study could include, also, key management personnel representing divergent departments i.e. operations, marketing, and human resource management. This will provide the researcher with an opportunity to assess how far the IFIs' staff members are aware of the significant importance of IC resources as the strategic assets in attaining profitability and market valuation in today's knowledge intensive economy.

Potential research may include all such institutions offering Shariah-compliant products and services such as *Takaful* companies. This will allow the researcher to compare the impact of IC across Shariah compliant business.

Another area of potential research is to determine the perception of the users (clients/customers) of Shariah-compliant products and services. Previous research (Hsu and Wang, 2012) included relational/customer capital while assessing IC's impact on performance. R&D expenses are used as proxy to measure relational capital. Since most financial institutions (including IFIs used in this study) do not disclose R&D expenses in their financial statements, it would be helpful, therefore, to determine if, when selecting an IFI, customers took into consideration IC factors particularly, human capital (including member of SSB) and executive members sitting on the governing boards.

The same research can be replicated using a broader sample, including both conventional and Islamic financial institutions operating in the same financial markets. This will allow the researchers to make a comparative analysis between both sets of banking being either conventional or Islamic. Additionally, inclusion of firm-specific features such as accounting standards, credit ratings etc. could assist potentially in explaining the effects of IC on firm performance.

10.5 Concluding Remarks

As mentioned earlier, this study is one of a kind. There exists no study as such that examines the impact of and corporate governance features on performance of Islamic financial institutions. Furthermore, Islamic finance industry is still in its infancy and striving with many challenges and, therefore, more empirical research in the field is needed.

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